

School of Health Professions

Located on the KU Medical Center campus in Kansas City, Kan., the KU School of Health Professions (<http://healthprofessions.kumc.edu>) offers more than 25 academic programs, from undergraduate and graduate degrees to certificate programs, that prepare students for careers in health care, research and leadership. Admission and degree requirements vary by program.

Advising

It is strongly recommended that students seek advising from the academic program of interest as soon as possible in his or her collegiate study. Please refer to the specific academic program for appropriate contact information and advising availability.

Undergraduates on the KU Lawrence campus interested in health professions programs should consult Robin Merritt, health professions advisor in the Undergraduate Advising Center (<http://advising.ku.edu>), 785-864-2805 (711 TTY), rmerritt@ku.edu (rmerritt).

Audiology and Speech-Language Pathology (<http://catalog.ku.edu/health-professions/audiology-speech-language-pathology>)

Clinical Doctor of Speech-Language Pathology (<http://catalog.ku.edu/health-professions/audiology-speech-language-pathology/slpd>)
 Doctor of Audiology (<http://catalog.ku.edu/health-professions/audiology-speech-language-pathology/aud>)
 Doctor of Philosophy in Speech-Language Pathology or Audiology (<http://catalog.ku.edu/liberal-arts-sciences/speech-language-hearing-phd>)

Master of Arts in Speech-Language Pathology (<http://catalog.ku.edu/liberal-arts-sciences/speech-language-hearing/ma>)

Cardiovascular Technology (<http://catalog.ku.edu/health-professions/cardiovascular-technology>)

Certificate in Advanced Cardiovascular Technology (<http://catalog.ku.edu/health-professions/cardiovascular-technology/certificate-in-advanced-cardiovascular-technology>)

Clinical Laboratory Sciences (<http://catalog.ku.edu/health-professions/clinical-laboratory-sciences>)

Bachelor of Science in Clinical Laboratory Science (<http://catalog.ku.edu/health-professions/clinical-laboratory-sciences/bs>)

Diagnostic Ultrasound Technology (General and Vascular) (<http://catalog.ku.edu/health-professions/diagnostic-ultrasound-technology>)

Certificate in Diagnostic Ultrasound Technology (General and Vascular) (<http://catalog.ku.edu/health-professions/diagnostic-ultrasound-technology/certificate>)

Dietetics and Nutrition (<http://catalog.ku.edu/health-professions/dietetics-nutrition>)

Dietetic Internship Graduate Certificate (<http://catalog.ku.edu/health-professions/dietetics-nutrition/certificate>)

Dietetics and Integrative Medicine Graduate Certificate (<http://catalog.ku.edu/health-professions/dietetics-nutrition/integrative-med-certificate>)

Master of Science in Dietetics and Nutrition (<http://catalog.ku.edu/health-professions/dietetics-nutrition/ms>)

Master of Science Great Plains IDEA Program (<http://catalog.ku.edu/health-professions/dietetics-nutrition/ms/greatplains>)
 Doctor of Philosophy in Medical Nutrition Science (<http://catalog.ku.edu/health-professions/dietetics-nutrition/phd>)

Health Informatics (<http://catalog.ku.edu/nursing>)

Master of Science in Health Informatics (<http://catalog.ku.edu/nursing/ms-health-informatics>)
 Health Informatics Post-Graduate Certificate (<http://catalog.ku.edu/medicalcentercampusinterdisciplinarystudies/healthinfogradcert>)

Health Information Management (<http://catalog.ku.edu/health-professions/health-information-management>)

Bachelor of Science in Health Information Management (<http://catalog.ku.edu/health-professions/health-information-management/bs>)

Molecular Biotechnology (<http://catalog.ku.edu/health-professions/molecular-biotechnology>)

Master of Science in Molecular Biotechnology (<http://catalog.ku.edu/health-professions/molecular-biotechnology/ms>)

Nuclear Medicine Technology (<http://catalog.ku.edu/health-professions/nuclear-medicine-technology>)

Certificate in Nuclear Medicine Technology (<http://catalog.ku.edu/health-professions/nuclear-medicine-technology/certificate>)

Nurse Anesthesia (<http://catalog.ku.edu/health-professions/nurse-anesthesia>)

Doctor of Nurse Anesthesia Practice (<http://catalog.ku.edu/health-professions/nurse-anesthesia/dnap>)

Occupational Therapy (<http://catalog.ku.edu/health-professions/occupational-therapy>)

Master of Occupational Therapy (<http://catalog.ku.edu/health-professions/occupational-therapy/mot>)

Doctor of Occupational Therapy (<http://catalog.ku.edu/health-professions/occupational-therapy/otd>)

Physical Therapy and Rehabilitation Science (<http://catalog.ku.edu/health-professions/physical-therapy-rehabilitation-science>)

Doctor of Physical Therapy (<http://catalog.ku.edu/health-professions/physical-therapy-rehabilitation-science/dpt>)

Doctor of Philosophy in Rehabilitation Science (<http://catalog.ku.edu/health-professions/physical-therapy-rehabilitation-science/phd>)

Respiratory Care (http://catalog.ku.edu/health-professions/respiratory-care)	Bachelor of Science in Respiratory Care (http://catalog.ku.edu/health-professions/respiratory-care/bs)
Therapeutic Science (http://catalog.ku.edu/health-professions/therapeutic-science)	Doctor of Philosophy in Therapeutic Science (http://catalog.ku.edu/health-professions/therapeutic-science/phd)

The Office of Graduate Studies at KU Medical Center reviews and approves matters related to graduate study including admission, course work and degree requirements. Each college or school at the University of Kansas has a graduate division reporting to KU Lawrence Graduate Studies. The Office of Graduate Studies (<http://www.kumc.edu/academic-affairs/graduate-studies.html>) serves as the graduate division for the schools located on the medical center campus.

Students do not enter programs in the School of Health Professions before the junior year of college. Some programs require an associate's or bachelor's degree in a specific field prior to beginning course work. All have specific prerequisites and minimum grade-point averages for collegiate course work.

Bachelor's degrees are available in the following fields:

- Clinical laboratory science
- Health information management
- Respiratory care

In addition, the following certificate programs at the undergraduate level are available:

- Advanced cardiovascular technology
- Diagnostic ultrasound technology (general and vascular)
- Nuclear medicine technology

University Honors Program

The school encourages qualified students to participate in the University Honors Program (<http://www.honors.ku.edu>).

The School of Health Professions offers graduate programs in the fields of dietetics and nutrition, molecular biotechnology, nurse anesthesia, occupational therapy, physical therapy, rehabilitation science, and therapeutic science. In addition, programs in audiology and speech-language pathology are offered cooperatively with the Lawrence campus via the Intercampus Program in Communicative Disorders.

Basic admission requirements are listed in the Graduate Studies (<http://catalog.ku.edu/graduate-studies>) section of the online catalog; however, individual graduate programs have specific additional requirements.

The School of Health Professions (p. 1) offers the following graduate degrees:

- Master of Arts
- Master of Occupational Therapy
- Master of Science
- Doctor of Audiology
- Doctor of Nurse Anesthesia Practice
- Doctor of Occupational Therapy
- Doctor of Physical Therapy

- Doctor of Philosophy
- Doctor of Speech-Language Pathology

Two certificate programs are available at the graduate level:

- Dietetic internship
- Dietetics and integrative medicine

For information about university regulations, see Regulations (<http://catalog.ku.edu/regulations>) or visit the University of Kansas Policy Library (<http://www.policy.ku.edu>). All students in the School of Health Professions are required to follow and abide by policies stated in the KU School of Health Professions student handbook (<http://www.kumc.edu/school-of-health-professions/student-handbook.html>) as well as those defined in the handbook of the student's academic program.

Undergraduate Regulations

Credit/No Credit

A Credit/No Credit option is available to all degree-seeking undergraduates. Students may enroll in one course each semester under the option, if the course is not in the student's major or minor. For more information, visit the KU Policy Library (<https://documents.ku.edu/policies/governance/USRR.htm#art2sect2>).

Warning: *Certain undesirable consequences may result from exercising the option. Some schools, scholarship committees, and honorary societies do not accept this grading system and convert grades of No Credit to "F" when computing grade-point averages.*

Check with the department before electing the Credit/No Credit option because most programs will NOT accept this designation for prerequisite courses.

Grading

The departments of Clinical Laboratory Sciences, Health Information Management, and Respiratory Care recognize only grades of A, B, or C as passing. Grades of D and F are not considered passing for the purpose of advancing in the curriculum.

Graduation with Distinction and Highest Distinction

The School of Health Professions awards the Highest Distinction honor to undergraduates having achieved the highest grade-point average among the programs in the school upon graduation. Distinction honors are bestowed upon those with the next highest final grade-point average. The total number of these two categories combined may exceed ten percent of that year's graduating class.

Honor Roll

Students with grade-point averages of 3.5 having completed at least 12 hours with letter grades are recognized on the honor roll or dean's list in fall and spring. An honor roll notation appears on the transcript.

Transfer of Credit

Only transfer grades of C or higher apply toward graduation from the School of Health Professions. Not all programs in the school accept transfer students. Please check with the appropriate program for full eligibility requirements.

CredTran (<http://creditransfer.ku.edu>) is a transfer course equivalency system listing more than 2,200 colleges and universities from which KU

has accepted transfer courses in the past. If your school or course is not listed, the student's evaluation will be completed after admittance to KU.

Graduate Regulations

Programs at the graduate level follow policies administered by the Office of Graduate Studies (<http://catalog.ku.edu/graduate-studies/kumc/#regulationstext>) in addition to those indicated in the KU School of Health Professions student handbook (<http://www.kumc.edu/school-of-health-professions/student-handbook.html>) as well as those detailed in the handbook of the student's specific academic program.

Credit/No Credit

Graduate students may select the Credit/No Credit option for certain courses. Students should follow the policy outlined in the University Senate Rules and Regulations, Section 2, article 2.27, and contact the department or program for more information.

Clinical Lab Sciences Courses

CLS 210. Introduction to Clinical Laboratory Sciences. 1 Hour.

An introductory overview of the professions of Clinical Laboratory Sciences and Cytotechnology including types of analyses performed, specialties, interrelationships in the health care system and a visit to a clinical laboratory. This course will enable those considering a major in the Clinical Laboratory Sciences to have a clear definition of the professions. (Same as BIOL 210.) LEC.

CLS 520. Phlebotomy. 1 Hour.

Principles and practice of collecting blood specimens for clinical laboratory analyses. Includes specimen identification, equipment, anticoagulants, safety precautions, specimen transport, and processing. Hepatitis immunization required. Prerequisite: Admission to the Clinical Laboratory Science Program or consent of instructor. LAB.

CLS 523. Fundamentals of Analytical Techniques Laboratory. 3 Hours.

Student laboratory with recitation addressing techniques and methodologies used in the clinical laboratory. Laboratory skills include laboratory math, quality control, pipetting, and instrumentation used in analysis of body fluids. Prerequisite: Admission to the Clinical Laboratory Sciences program or consent of the instructor. LAB.

CLS 530. Clinical Chemistry I. 3 Hours.

Introduction to human physiology and pathophysiology I with emphasis on proteins, carbohydrates, lipids, enzymes, liver kidney function, blood gases and body fluids. The related clinical chemistry tests, their principles, analysis, interpretation, and significance are included. Prerequisite: CLS 523 or consent of instructor. LEC.

CLS 532. Clinical Microbiology I. 3 Hours.

Pathogenesis and disease processes of pathogenic, opportunistic, and saprophytic bacteria; composition and preparation of media; sterilization and disinfection; antimicrobial agents and susceptibility testing; topics related to theory and applications. Prerequisite: Admission to the Clinical Laboratory Sciences program or consent of the instructor. LEC.

CLS 533. Clinical Microbiology I Laboratory. 2 Hours.

A laboratory with recitation addressing diagnostic procedures used for isolation and identification of clinically significant bacteria. Prerequisite: CLS 532 or CLS 532 concurrently, or consent of the instructor. LAB.

CLS 536. Hematology I. 3 Hours.

Fundamentals of hematopoiesis; the physiology, function, and cytochemistry of normal and abnormal blood cells; the theory and

performance of clinical laboratory methods related to these parameters. Prerequisite: Admission to the Clinical Laboratory Sciences program or consent of the instructor. LEC.

CLS 537. Hematology I Laboratory. 2 Hours.

A laboratory with recitation emphasizing basic hematologic techniques and identification of normal and abnormal cells in peripheral blood and bone marrow. Prerequisite: CLS 536, or CLS 536 concurrently, or consent of the instructor. LAB.

CLS 538. Immunology. 3 Hours.

Covers basic theory of molecular and cellular immunology of innate and adaptive immune systems. Lectures include: structure and function of antibodies, complement, major histocompatibility complexes, B- and T-cells and their receptors, cellular and molecular basis of the immune response and immune regulation, hypersensitivity, and immune tolerance. Clinical applications and methodologies will be incorporated into lectures. Prerequisite: Admission to the Department of Clinical Laboratory Sciences or consent of instructor. LEC.

CLS 540. Clinical Chemistry II. 2 Hours.

Introduction to human physiology and pathophysiology II with emphasis on hormones, therapeutic drugs, clinical toxicology, tumor markers, vitamins and trace elements. The related clinical chemistry tests, their principles, analysis, interpretation, and significance are included. Prerequisite: CLS 530 or consent of instructor. LEC.

CLS 541. Professional Development. 2 Hours.

This course combines lectures and projects to give students an introduction to and practice in the following: resume writing and interviewing skills; the components of and the production of a scholarly product; the basic principles involved in education with the identification and writing of educational objectives; the activities and responsibilities involved in laboratory management. Prerequisite: CLS 520 - CLS 549 or consent of instructor. LEC.

CLS 542. Clinical Microbiology II. 2 Hours.

Pathogenesis, disease processes, and diagnostic protocols for parasites, medically important fungi and mycobacteria. Prerequisite: Admission to the Clinical Laboratory Sciences program or consent of the instructor. LEC.

CLS 543. Clinical Microbiology II Laboratory. 2 Hours.

A laboratory with recitation addressing diagnostic procedures used for isolation and identification of parasites, medically important fungi, and mycobacteria. Prerequisite: Admission to the Clinical Laboratory Sciences program or consent of the instructor. LAB.

CLS 544. Immunohematology I. 3 Hours.

Principles of immunohematology as applied to transfusion services, donor services, component preparation and storage, and transfusion therapy. Includes problem solving for transfusion related situations and evaluation of problems related to hemolytic disease of the newborn, autoimmune hemolytic disorders, and transfusion reactions. Prerequisite: BIOL 503 or CLS 538, CLS 546, or consent of instructor. LEC.

CLS 545. Immunohematology I Laboratory. 2 Hours.

Principles of immunohematology as applied to transfusion services, donor services, component preparation and storage, and transfusion therapy. Includes problem solving for transfusion related situations and evaluation of problems related to hemolytic disease of the newborn, autoimmune hemolytic disorders, and transfusion reactions. Prerequisite: BIOL 503 or CLS 538, CLS 546, or consent of instructor. LAB.

CLS 546. Hematology II. 3 Hours.

Lectures on hematopoiesis, the physiology, function, and cytochemistry of normal and abnormal blood cells, normal and abnormal hemostasis,

and the theory and performance of laboratory methods related to these parameters. Prerequisite: CLS 536 and CLS 537 or consent of instructor. LEC.

CLS 547. Hematology II Laboratory. 2 Hours.

A laboratory with recitation involving performance of hematology laboratory procedures with emphasis on basic hematologic and coagulation techniques and the identification of normal and abnormal cells in the peripheral blood and bone marrow. Prerequisite: CLS 536, CLS 537 and CLS 546 or CLS 546 concurrently, or consent of the instructor. LAB.

CLS 549. Clinical Immunology I Laboratory. 2 Hours.

A laboratory with recitation involving performance of immunoassays. Emphasis on theory, methodologies, and clinical correlations. Prerequisite: CLS 523, BIOL 503 or CLS 538, or consent of instructor. LEC.

CLS 600. Introductory Biochemistry. 3 Hours.

An introduction to the chemistry and metabolism of carbohydrates, lipids, proteins, nucleic acids, and other biologically important molecules. Topics include cellular processes, reactions and interactions occurring in living organisms. Prerequisite: Admission to the Department of Clinical Laboratory Sciences or consent of instructor. LEC.

CLS 605. Introduction to Molecular Diagnostics I. 1 Hour.

An introduction to molecular biology and molecular biological methodologies and technologies commonly used in basic, applied, and diagnostic laboratories. An emphasis is placed on molecular biology principles and techniques used in the clinical laboratory for diagnosis, prognosis, and treatment of disease. Prerequisite: Admission to the Clinical Laboratory Sciences program or consent of the instructor. LEC.

CLS 607. Introduction to Molecular Diagnostics I Laboratory. 1 Hour.

An introduction to molecular diagnostic methodologies and technologies commonly used in clinical laboratories. Principles and performance of nucleic acid isolation, restriction enzyme digestion, electrophoresis, amplification, hybridization, and analysis. Applications in infectious and genetic disease. Prerequisite: Admission to the Clinical Laboratory Science program or Cytotechnology program or consent of the instructor. LEC.

CLS 608. Introduction to Advanced Biotechniques. 0 Hours.

A lecture course introducing the theory behind a variety of current molecular, biochemical and immunologic techniques utilized in molecular research and diagnostic laboratories. Course content is continued in CLS 610, Advanced Biotechniques Lecture. Prerequisite: Admission to the Clinical Laboratory Sciences program or consent of instructor. LEC.

CLS 609. Introduction to Advanced Biotechniques Laboratory. 0 Hours.

Introductory laboratory course with practical application of selected molecular, biochemical, and immunologic techniques. Course content is continued in CLS 611, Advanced Biotechniques Laboratory. Prerequisite: Admission to the Clinical Laboratory Sciences program or consent of instructor. LAB.

CLS 610. Advanced Biotechniques Lecture. 3 Hours.

A lecture course covering the theory behind a variety of current molecular, biochemical and immunologic techniques utilized in today's research and diagnostic laboratories. Material presented will include proper specimen preparation and handling; technique set-up and quality control; trouble shooting and technique modification. Prerequisite: Admission to the Clinical Laboratory Sciences program or consent of instructor. LEC.

CLS 611. Advanced Biotechniques Laboratory. 2 Hours.

Student Laboratory course with practical application of selected molecular, biochemical, and immunologic techniques. Designed to provide

limited experience with advanced chromatographic techniques (DEAE-cellulose, affinity columns, HPLC, and gas); multiple electrophoresis techniques (starch-gel, SDS-page, Southern blot); nucleic acid analysis and manipulation; ligand production and utilization; cell culture, including appropriate sterilization methods, aseptic handling, and steps to ensure attachment. Prerequisite: Admission to the Clinical Laboratory Sciences program or consent of instructor. LAB.

CLS 621. Biotechnology Methodologies Practicum. 4 Hours.

Placement of the student in a biotechnology core facility supporting molecular biological research from multiple laboratories. Such a core facility would provide, but not to be restricted to, the following methodologies: amino acid analysis; protein/peptide sequencing; peptide synthesis; DNA/RNA sequencing; oligonucleotide synthesis. Prerequisite: Admission to the Clinical Laboratory Sciences program or consent of instructor. LAB.

CLS 622. Problems in Molecular Diagnostics. 2 Hours.

Provides a targeted review of current theory, techniques and application of molecular techniques in the diagnosis of infectious disease, and hereditary and acquired genetic disease. Prerequisite: Admission to the Clinical Laboratory Science or Cytotechnology program, or consent of instructor. LEC.

CLS 623. Molecular Genetics Practicum. 4 Hours.

Placement of the student in a molecular genetics research laboratory (utilizing either prokaryotic or eucaryotic organisms or both) working with laboratory staff on an on-going small project within the laboratory. Molecular genetics laboratories utilized could be involved in, but not restricted to, any of the following activities: gene sequencing, cloning or splicing; elucidation of the mechanisms that regulate gene expression; proto-oncogene activation. Prerequisite: Admission to the Clinical Laboratory Sciences program or consent of instructor. LAB.

CLS 633. Special Topics Practicum. 4 Hours.

Placement of the student in any of a variety of research laboratories actively participating in molecular biological projects utilizing advanced genetic, biochemical immunologic, or other molecular techniques. Prerequisite: Admission to the Clinical Laboratory Sciences program or consent of instructor. LAB.

CLS 638. Clinical Competency Review. 0 Hours.

This review will enable students to identify areas of weakness in their understanding of clinical laboratory science in preparation for clinical rotations. Students will participate in Blackboard-based and in-person laboratory sessions in order to evaluate their performance in meeting required competencies. Prerequisite: CLS 520-CLS 549 inclusive, CLS 605, CLS 607, or consent of instructor. LAB.

CLS 639. Urinalysis. 1 Hour.

Tutorial instruction and clinical laboratory experience in urinalysis with the application of knowledge and skills to methodology, instrumentation, and quality control. Advanced content on renal disorders with emphasis on pathological mechanisms, interpretation, and clinical correlation of test results. Prerequisite: CLS 540, or consent of instructor. LEC.

CLS 640. Clinical Chemistry III. 2 Hours.

Tutorial instruction in advanced clinical chemistry focusing on correlation of laboratory analysis and pathophysiology. Addresses organ system disease, metabolic disease, nutrition, and other special topics. Prerequisite: CLS 540, or consent of instructor. LEC.

CLS 641. Clinical Chemistry and Immunology Practicum. 3 Hours.

Tutorial instruction and clinical laboratory experience in the chemistry of body fluids, with the application of knowledge and skills to methodology, instrumentation, and quality control. Involves correlation of chemical and

immunological analyses to pathophysiology. Prerequisite: CLS 540 and CLS 549, or consent of instructor. LAB.

CLS 642. Clinical Microbiology III. 2 Hours.

Tutorial instruction addressing pathophysiology and diagnostic protocols of viruses, rickettsia, chlamydia, mycoplasma, and other unusual organisms. Prerequisite: CLS 532, CLS 533, CLS 542 and CLS 543, or consent of instructor. LEC.

CLS 643. Clinical Microbiology Practicum. 3 Hours.

Tutorial instruction and clinical laboratory experience in diagnostic microbiology, with the application of knowledge and skills to methodology, instrumentation, and quality control. Prerequisite: CLS 532, CLS 533, CLS 542 and CLS 543, or consent of instructor. LAB.

CLS 644. Immunohematology II. 2 Hours.

Tutorial instruction addressing advanced transfusion medicine theory and concepts. Focuses on hospital transfusion services, blood utilization, management, legal and regulatory issues, and special topics. Prerequisite: CLS 544 and CLS 545, or consent of instructor. LEC.

CLS 645. Immunohematology Practicum. 2 Hours.

Tutorial instruction and clinical laboratory experience in transfusion medicine, with the application of knowledge and skills to methodology, instrumentation, and quality control. Prerequisite: CLS 544, CLS 545, or consent of instructor. LAB.

CLS 646. Hematology III. 2 Hours.

Tutorial instruction on hematologic and hemorrhagic disorders with emphasis on pathological mechanisms, interpretation, and clinical correlation of test results. Prerequisite: CLS 546 and CLS 547, or consent of instructor. LEC.

CLS 647. Hematology Practicum. 3 Hours.

Tutorial instruction and clinical laboratory experience in hematology, with the application of knowledge and skills to methodology, instrumentation, and quality control. Prerequisite: CLS 546 and CLS 547, or consent of instructor. LAB.

CLS 648. Clinical Immunology II. 1 Hour.

Tutorial instruction on immune system involvement in disease processes, immune dysfunction and correlation of laboratory data with disease states. Prerequisite: CLS 549, or consent of instructor. LEC.

CLS 650. Clinical Laboratory Science Review. 1 Hour.

This review will enable students to identify areas of weakness in their understanding of clinical laboratory science in preparation for clinical rotations and comprehensive examination. Students will participate in classroom and laboratory sessions in order to evaluate their performance in meeting required competencies. Prerequisite: CLS 520-CLS 549 inclusive, CLS 605, CLS 607, CLS 661, and CLS 639-CLS 648 inclusive, or consent of instructor. LEC.

CLS 655. Molecular Biotechnology Review. 0 Hours.

Review of the clinical laboratory science body of knowledge in preparation for, and culminating in the BS in CLS - Molecular Biotechnology Concentration comprehensive examination. Prerequisite: CLS 520-CLS 549 inclusive, CLS 605-CLS 633 inclusive, and CLS 661 or consent of instructor. LEC.

CLS 661. Management Principles in Health Care. 2 Hours.

Introduction to basic principles of management and their application in the current health care environment as they pertain to the clinical laboratory. Course content includes: management theory, scope of management, quality issues, budgeting, personnel issues, evaluation and application of management concepts, introductory research methods. Prerequisite: Admission to the Clinical Laboratory Sciences program or consent of the instructor. LEC.

CLS 670. Principles of Education in Clinical Laboratory Science. 1 Hour.

Educational concepts including principles of learning, curriculum design, evaluation, teaching methodologies, audiovisual and library resources, accreditation, student services, and legal considerations. Prerequisite: Admission to the Clinical Laboratory Science program or consent of instructor. LEC.

CLS 690. Special Topics. 1-5 Hours.

A course of study offering the student the opportunity for acquisition of additional knowledge and skills in one of the clinical laboratory routine areas or a specialty area, e.g., cytogenetics, metabolic analysis, or supervision; or at another clinical site. Course requirements designed in cooperation with student. Prerequisite: Admission to the Clinical Laboratory Science program or consent of instructor. LEC.

CLS 705. Fundamentals of Pathophysiology. 3 Hours.

Review of integrative human physiology with an emphasis upon homeostatic mechanisms and etiologies of disease. The interrelationships of function and dysfunction at the molecular, cellular and tissue level (pathology), organ and systematic level (impairment), and to the total human body (functional limitations) will be applied in each of the body systems. Discussions and applied materials will be tailored to the professional student population. Prerequisite: Admission to the Dietetics and Nutrition program or permission of the instructor(s). LEC.

CLS 710. Molecular Techniques I. 2 Hours.

A lecture course covering the theory underlying molecular techniques involving nucleic acids and mammalian cell culture. Topics include purification and analysis of nucleic acids, recombinant DNA, construction and screening of genetic libraries, genetic engineering, control of gene expression, construction of gene fusions, amplification, hybridization, and nucleic acid databases and bioinformatic analysis. Prerequisite: Admission to the MS in Molecular Biotechnology program or consent of instructor. LEC.

CLS 711. Molecular Techniques Laboratory I. 2 Hours.

A laboratory course emphasizing the application, practice, and troubleshooting of molecular techniques involving nucleic acids and mammalian cell culture. Topics include purification and analysis of nucleic acids, recombinant DNA, genetic engineering, control of gene expression, construction of gene fusions, amplification, and hybridization. Topics are covered through a project-based approach. Prerequisite: Admission to the MS in Molecular Biotechnology program or consent of instructor. LAB.

CLS 720. Molecular Techniques II. 2 Hours.

Lecture and discussion course covering the theory and practice of molecular techniques for protein analysis. General topics include: protein detection, quantification, and characterization; protein separation and identification; protein expression systems; protein extraction, fractionation, solubilization and purification; analysis of protein-protein interactions; proteomics; and mass spectroscopy. Prerequisite: Admission to the MS in Molecular Biotechnology program or consent of instructor. LEC.

CLS 721. Molecular Techniques Laboratory II. 2 Hours.

Laboratory course for the practice and application of molecular techniques for analyzing and manipulating proteins. Techniques will include: bioinformatics analyses; expression, purification and solubilization of epitope tagged fusion proteins, protein-protein interactions; protein quantification; protein separation by electrophoresis and column chromatography; protein detection by chemical and immunological methods; and LC-MS. Prerequisite: Admission to the MS in Molecular Biotechnology program or consent of instructor. LAB.

CLS 730. Current Issues in Biotechnology. 1 Hour.

A seminar course that address topics including scientific, business, legal, social, and ethical issues in biotechnology. Students explore these topics through literature discussions, student presentations, and discussions with speakers from biotechnology-related academic and industry sectors. This course is meant for graduate students in the Molecular Biotechnology program. Prerequisite: Consent of instructor. SEM.

CLS 740. Journal Club. 1 Hour.

This course is an introduction to the critical reading of journal articles from the current literature in molecular biotechnology. Discussions will emphasize the analysis of experimental design and technique, as well as the significance of the results and validity of the author's conclusions. Students will learn how to search for articles and background information pertaining to selected topics, an how to present a polished, professional summary of that literature. Assigned papers for discussion and student presentations will focus on new strategies and technologies in molecular biotechnology of wide fundamental importance, or on hypothesis-based research that uses molecular biotechnological approaches. Prerequisite: Completion of (or concurrent enrollment in) CLS 710 and CLS 720. LEC.

CLS 742. Scientific Writing. 1 Hour.

Formats, techniques, and styles of scientific writing. Emphasis will be placed on clear, concise, and effective writing. The class will focus on the process of writing scientific manuscripts and grant proposals. Students will identify and define the sections of scientific manuscripts as well as grant proposals. During the course, each student will write an R21-type (NIH Exploratory/Developmental Research Grant) proposals as could be submitted to the most appropriate NIH Institute. This course is intended for students enrolled in their final semester of the Master of Science in Molecular Biotechnology program. Prerequisite: Consent of Instructor LEC.

CLS 744. Topics in Molecular Biotechnology. 1-5 Hours.

Advanced course on special topics in molecular biotechnology, offered by arrangement. May include lectures, discussions, readings, laboratory techniques, and supervised research experience. This course is intended for graduate students in the Molecular Biotechnology program. Prerequisite: Consent of instructor. LEC.

CLS 750. Practicum I. 4 Hours.

Advanced practical experience in a selected laboratory pursuing applied, basic, or diagnostic research projects utilizing genetic, biochemical, or other molecular biology-related approaches. Students apply and extend their knowledge and skills by performing a research and/or development project under the supervision of a site mentor. This practicum is performed at a site other than those utilized for CLS 751 (Practicum II) and CLS 752 (Practicum III). Prerequisite: Completion of CLS 710, CLS 711, CLS 720, and CLS 721, and consent of the instructor. PRA.

CLS 751. Practicum II. 5 Hours.

Advanced practical experience in a selected laboratory pursuing applied, basic, or diagnostic research projects utilizing genetic, biochemical, or other molecular biology-related approaches. Students apply and extend their knowledge and skills by performing a research and/or development project under the supervision of a site mentor. This practicum is performed at a site other than those utilized for CLS 750 (Practicum I) and CLS 752 (Practicum III). Prerequisite: Completion of CLS 710, CLS 711, CLS 720, and CLS 721, and consent of the instructor. PRA.

CLS 752. Practicum III. 5 Hours.

Advanced practical experience in a selected laboratory pursuing applied, basic, or diagnostic research projects utilizing genetic, biochemical, or other molecular biology-related approaches. Students apply and extend their knowledge and skills by performing a research and/or development project under the supervision of a site mentor. This practicum is

performed at a site other than those utilized for CLS 750 (Practicum I) and CLS 751 (Practicum II). Prerequisite: Completion of CLS 710, CLS 711, CLS 720, and CLS 721, and consent of the instructor. PRA.

Dietetics and Nutrition Courses**DIET 660. Management of Human Resources in Dietetics. 6 Hours.**

Focus on human resource development and utilization as the student works with food service personnel. Learning encompasses recruiting, training, supervision, and evaluation of employees in a food service system. Open only to seniors majoring in dietetics. Prerequisite: Management concepts or personnel administration. LEC.

DIET 661. Management of Food Processing and Service. 6 Hours.

Application of theories and concepts pertaining to management functions and interdepartmental relationships in a variety of clinical food service settings. Consideration is given to the newer technological developments in the administration of food services. Open only to seniors majoring in dietetics. Prerequisite: Food service systems and management in dietetics. FLD.

DIET 662. Special Problems in Food Service Management. 3 Hours.

Advanced experience in the practice of dietetics in an assigned setting. Problems and procedures will vary with interest and needs of the students. Open only to seniors majoring in dietetics. Prerequisite: Food service systems. FLD.

DIET 672. Nutrition Care of Patients. 6 Hours.

Directed observation and supervised experience in nutritional care of patients. Nutrition principles studied in DIET 670, Applied Normal Nutrition, and DIET 671, Nutrition in Medical Science, are applied in clinical situations. Open only to seniors majoring in dietetics. Prerequisite: Principles of nutrition; and nutrition throughout the life cycle. LEC.

DIET 675. Seminar in Dietetics and Nutrition. 1 Hour.

Involves study and discussion of text and general materials pertaining to philosophy and methodology in the field of dietetics and nutrition. Guest lecturers will participate. May be repeated for credit providing no course duplication takes place. Open only to seniors majoring in dietetics. Prerequisite: Introduction to dietetics. FLD.

DIET 800. Selected Topics in Dietetics. 1-3 Hours.

An elective course to allow student credit hours in special issues or problems in dietetics offered by individual faculty. Course content can provide students with investigation of problems and/or issues relevant to theory, research investigation and/or practice related to the field of nutrition and dietetics. LEC.

DIET 801. Current Issues or Trends. 3 Hours.

Review of current issues in the economic, social, ethical, political, legal, technological, and ecological environments and the effects of these changes on dietetics practice. LEC.

DIET 802. Foods Writing for Professionals. 3 Hours.

A course focusing on the writing skills needed by the food professional in order to communicate effectively in writing about food and food-related topics. Student experiences include hands-on projects in research and writing for various audiences and types of publications. LEC.

DIET 803. Accounting Concepts & Analysis. 3 Hours.

An emphasis on financial statement analysis is the main objective of the course. A review of all major accounts in the income statement, balance sheet and statement of cash flow is made in determining a firm's performance and financial condition in relation to what matters most to shareholders and investors. Prerequisite: General Calculus and Linear Algebra LEC.

DIET 805. Entrepreneurship Theory and Practice. 3 Hours.

Development and management of small businesses or private practice within the dietetics industry. Business plan development, marketing, cost considerations. Overview of consulting to health care and hospitality operations and examination of skills required for success. LEC.

DIET 819. Grant and Scientific Writing for the Professional. 3 Hours.

Grant writing, identifying external funding, managing grants, preparing manuscripts for peer-reviewed publication, and preparing papers and poster for presentation at professional meetings. Prerequisite: Enrolled GPIDEA. LEC.

DIET 822. Healthcare Administration. 3 Hours.

A comprehensive review of today's health care institutions and their response to the economic, social/ethical, political/legal, technological, and ecological environments. LEC.

DIET 824. Financial Management and Cost Controls in Dietetics. 3 Hours.

This course overviews the fundamental knowledge of financial management, managerial accounting, and operational cost controls for dietetics professionals. Topics include a review of managerial accounting concepts for not-for-profit organizations and for-profit organizations based on the Uniform System of Accounts, value and risk analyses, budgeting, asset management, franchising and management contracts, cost-volume-profit analyses, and operational applications for financial performance. LEC.

DIET 829. Nutrition and Aging. 3 Hours.

An overview of nutrition and the aging process. Physiological, psychological, and sociological aspects of aging, theories of aging, internal and external factors related to nutrient intake, and nutrient needs will be considered. Physical activity and practical application to community settings is addressed. LEC.

DIET 830. Nutrition: a Focus on Life Stages. 3 Hours.

The influence of normal physiological stresses on nutritional needs throughout the life span will be explored. Evaluating nutritional status at different stages of life and identifying appropriate needs and services will be included while, at the same time, consideration given for specific characteristics such as physiological condition and cultural heritage. LEC.

DIET 832. Functional Foods for Chronic Disease Prevention. 3 Hours.

Integrate and evaluate the regulatory principles, food science, nutrient science and nutritional metabolism for the development of functional foods, nutraceuticals, and dietary supplements for chronic disease prevention. Prerequisite: Biochemistry, Human Nutrition, Basic Food Science or consent of instructor. LEC.

DIET 833. Principles of Statistics. 3 Hours.

A basic course in statistics: Statistical methods applied to experimental and survey data from social or natural sciences; test of hypotheses concerning treatment means; linear regression; product-moment, rank, and bi-serial correlations; contingency tables and chi-square tests. LEC.

DIET 834. Methods of Research in Nutrition. 3 Hours.

A study of basic research terminology and designs commonly used in nutrition research. Topics include: research on animals, tissue culture and human subjects; qualitative, quantitative and outcomes research; ethical issues in research; dissemination of research findings; and appropriate use of research findings. Prerequisite: Consent of instructor. LEC.

DIET 836. Biochemical, Physiological, and Genetic Aspects of Human Nutrition. 3 Hours.

The topics covered will examine the integration of biochemistry, physiology, genetics, and nutrition. Emphasis will be placed on developing an understanding of how the combination cellular structure and function

is related to the metabolic needs of the cell and its response to the environment. The integrated approach will form a basis for evaluating nutritional needs in humans. Prerequisite: courses in nutrition, physiology, and biochemistry, or consent of instructor. LEC.

DIET 838. Advanced Medical Nutrition Therapy. 3 Hours.

This course will discuss the role of diet in disease including diet as a factor related to prevention of diseases or illness, diet as an etiologic agent in illness and diet as a treatment for disease. Medical nutrition therapy is the use of specific nutrition services to treat an illness, injury or condition and involves two phases: 1) assessment and 2) treatment, which includes diet therapy, counseling and/or the use of specialized nutrition supplements. LEC.

DIET 839. Clinical Aspects of Nutrition Support. 3 Hours.

The course content provides in depth study of specialized visceral and somatic nutrition assessment of the critically ill patient. Content includes extensive review of methods for determining energy expenditure and substrate utilization during specific disease states. Discussion of the aspects of feeding the critically ill patient including timing, enteral and parenteral feeding methodology, specialized medical foods, equipment requirements, feeding complications and prevention, and pharmacological issues. Students will be expected to calculate formulas for both types feeding modalities and provide discussion of the evidence based guidelines for administration of these nutrition therapies. Prerequisite: minimum of 3 cr hours in Medical Nutrition Therapy. LEC.

DIET 840. Foundations of Leadership in Dietetics. 3 Hours.

Study of the key issues in the theory, research and application of leadership in organizations. This includes defining leadership, understanding situational characteristics that facilitate/hinder effective leadership, understanding effective/dysfunctional leadership and gaining greater insight into one's own leadership style and functioning. Prerequisite: Must be admitted to the GPIDEA Program. LEC.

DIET 841. International Nutrition and World Hunger. 3 Hours.

Advanced study of the magnitude, cause, and nature of hunger and undernutrition in low income countries; emphasis on programs, policies and planning directed toward alleviating hunger. LEC.

DIET 842. United States Public Health Nutrition. 1-3 Hours.

A study of US public health and nutrition concerns in diverse US populations, assessment of nutritional status in commonalities, health communication, nutrition policies and community based nutrition interventions. Exploration of the roles of dietitians, nutritionists, and others in developing and delivering nutrition policies and interventions in US communities. Prerequisite: Must be a student in the Graduate Certificate Dietetic Internship Program, the Dietetics and Nutrition Master of Science Program, or the Great Plains IDEA, or have the consent of the instructor. LEC.

DIET 843. Nutrition Education in the Community. 3 Hours.

Principles and practices of teaching individuals and groups to translate nutrition knowledge into action. Emphasis on research in and evaluation of nutrition education. LEC.

DIET 844. Behavior Management Theory. 3 Hours.

An in-depth analysis of the development of the behavioral basis of individual and group behavior in business, governmental, educational, and other organizations with emphasis on current research literature and applications. LEC.

DIET 845. Nutritional Aspects of Oncology. 3 Hours.

A course focusing on current research examining the role of nutrition in specific cancers. Topics include basic cancer biology, pathology and nutritional research methodology. Sources of information for cancer

prevention programs and the application of translational research to clinical patient populations will be discussed. LEC.

DIET 846. Nutrition and Wellness. 3 Hours.

Course will address wellness promotion through nutrition. Nutritional risk and protective factors will be examined as they relate to public health and individual nutrition. LEC.

DIET 850. Operations Management and Analysis. 3 Hours.

The study of the role of operations systems in the provision of value for the customer. Operations systems design; capacity determination, resource requirements planning and control, theory of constraints, supply chain management, quality management and control and project management are discussed and analyzed. Prerequisite: Basic graduate statistics course LEC.

DIET 854. Non-Thesis Research. 1-3 Hours.

Directed study of special problems in nutrition or nutrition care. This course provides for the individual or group study of special problems. Through directed readings, investigations and projects, the student acquires information with reference to questions in dietetics and nutrition not covered in organized courses. This course fulfills the research requirements for the Non-Thesis Option. RSC.

DIET 862. Maternal and Child Nutrition. 3 Hours.

Critical examination of behavioral, physiological, and public health issues impacting dietary and nutritional factors that support normal growth and development. Course content focuses on the early stages of the life cycle: gestation, lactation, infancy, preschool, school age, and adolescence. Topics include the fetal programming hypothesis, growth and nutritional requirements, breast and formula feeding of infants, infant weaning, and eating behaviors that lead to normal growth, growth faltering, and pediatric obesity. Cross-listed with DN 862. Prerequisite: Registered Dietitian, or registry eligible dietitian. LEC.

DIET 865. Nutrition and Human Performance. 3 Hours.

This course is designed to develop an understanding of nutrition, based upon knowledge of the biochemical and physiological process and functions of specific nutrients in meeting nutritional requirements. Emphasis will be placed upon the relationship of optimal nutrition and physical efficiency and performance. LEC.

DIET 870. Nutrition Counseling and Education Methods. 3 Hours.

Nutrition education for groups and individuals in clinical and community settings. Includes discussion and experience in applying learning theory, assessing educational needs, stating goals and objectives, selecting learning activities, implementing and evaluating instruction, and documenting care provided. LEC.

DIET 875. Pediatric Clinical Nutrition. 3 Hours.

Examines physiological, biochemical and nutritional aspects of disease processes relevant to infants and children up to 18 years of age. Medical nutrition therapy for a variety of medicine conditions found in this population will be discussed including inborn errors of metabolism, food hypersensitivity, obesity, and diseases of the major organ systems. Cross-listed with DN 875. Prerequisite: Registered Dietitian or registry eligible dietitian. LEC.

DIET 876. Intervention for the Prevention & Management of Obesity. 3 Hours.

This course emphasizes obesity in a population group ranging from childhood to the adult. Course materials will examine the impact of obese conditions on disease development throughout the life cycle. The course will critically analyze current evidence focused on interventions used in the behavioral and clinical management of overweight and obese

individuals in community and clinical settings. Prerequisite: Consent of instructor. LEC.

DIET 880. Dietary and Herbal Supplements. 3 Hours.

Explore the safety and efficacy of botanical/herbal and dietary supplements in health applications including dietary supplementation in the prevention and treatment of chronic disease. Prerequisite: Human physiology is advisable. LEC.

DIET 881. Phytochemicals. 3 Hours.

The course is an overview on phytochemicals (non-nutritive biologically active compounds which may have health benefits) from fruits, vegetables, cereals and oilseeds. The course will include discussions of functional foods which are designer foods providing these compounds to the public. It will cover recent findings on chemistry, physiological functions, potential health implications of phytochemicals. LEC.

DIET 885. Advanced Human Nutrition: Macronutrients. 3 Hours.

Physiological and biochemical aspects of macronutrients metabolism and human nutrition. Prerequisite: Must be admitted to the GPIEDA Program. LEC.

DIET 886. Advanced Nutrition: Nutrigenomics, Nutrigenetics and Advanced Lipid Metabolism in Human Nutrition. 3 Hours.

This course integrates topics related to current biochemical issues in nutritional science. The course will examine topics ranging from the cellular, molecular, and biochemical aspects of nutritional science to translational and applied research at the clinical and educational level. The goal is to emphasize the integrative and complex nature of human nutrition research ranging from basic science to clinical studies to translational and applied studies. LEC.

DIET 887. Nutrition and Immunology. 3 Hours.

This course examines the mechanisms underlying the modulation of immune responses by nutritional, naturally occurring and orally active food compounds. The role of nutritional status and changes in the life stages which impact immune response impacting disease initiation and progression. Contributions of the GI system and changes in life stages impacting immunity and their relationship to immune response will be discussed. LEC.

DIET 896. Micronutrients in Human Nutrition. 3 Hours.

Interrelationships of micronutrients in terms of biochemistry, physiology, genetics, and nutrition. Emphasis will be placed on developing an understanding of how the coordination of structure and function is related to the metabolic needs of the cell and its response to the environment. This integrated approach will form the basis for evaluating the micronutrient needs of humans in both normal and altered metabolic states. LEC.

DIET 899. Thesis. 1-6 Hours.

Scholarly essay based research, written under the guidance of the student's adviser. Credit given upon meeting thesis requirements for the master's program. THE.

Dietetics and Nutrition Courses

DN 601. Current Concepts in Clinical Nutrition. 2 Hours.

An overview of the nutritional therapies used for various disease disorders. The course emphasizes the nutritional care and treatment related to state of the art practice. LEC.

DN 670. Applied Normal Nutrition. 3 Hours.

Applied study of the relationship of normal food and nutrition principles to health promotion in select stages of the lifecycle. LEC.

DN 671. Nutrition in Medical Science. 6 Hours.

Study of the science of medical nutrition therapy and evidence based practice in the nutritional management of disease during specific stages of the life cycle. Prerequisite: Consent of Instructor LEC.

DN 796. Social and Cultural Aspects of Dietetics and Nutrition. 2-4 Hours.

A study of the aspects of society, culture and personality related diet, food habits, and nutrition. The role of the community and its agencies will be considered. Includes field work. Prerequisite: Consent of instructor. LEC.

DN 800. Selected Topics in Clinical Dietetics: _____. 1-6 Hours.

A learner-centered, self paced study of topics in applied clinical dietetics. Independent modules are offered to address the science and art of nutritional care relating to specific issues to clinical dietetics. Topics will be grouped in various combinations to provide flexibility of choice. Students may enroll in one or more topics for a total of six credit hours. Prerequisite: By permission of instructor only. LEC.

DN 810. Nutrition Assessment. 3 Hours.

Methods and tools used in screening and assessment of nutritional status of individuals and population groups are studied. Assessment methodology includes dietary surveys, computerized dietary intake analysis, anthropometric measures, biochemical measures and clinical evaluations. Laboratory experiences are provided to allow students practice time for learning and applying assessment techniques. Prerequisite: Permission of instructor. LEC.

DN 817. Seminar in Dietetics & Nutrition I. 1 Hour.

Seminar designed to promote effectiveness of professional written and oral communication, increase knowledge of research, and review content information in selected topics in dietetics. LEC.

DN 818. Seminar in Dietetics & Nutrition II. 1 Hour.

To promote effectiveness of professional written and oral communication, to increase knowledge of research, and to review content information n selected areas in dietetics. SEM.

DN 819. Scientific Writing for the Nutritional Sciences. 1 Hour.

Research proposal preparation and / or scientific manuscript writing experience. This course will provide the student with an overview of the steps used in proposal writing and / or the steps in preparation of a scientific manuscript for publication. LEC.

DN 820. Nutrition Education Skills for School Teachers. 3 Hours.

This graduate level course will expand understanding of nutrition and healthy eating for classroom teachers and other professionals who work with children. The course has a special emphasis on child and adolescent nutrition and how to translate nutrition facts into classroom applications and school-based interventions. Course topics will include healthy food choices, nutrition guidelines, nutrients, energy balance and weight, child and adolescent nutrition, and nutrition education in the classroom, school-based nutrition interventions, and measuring outcomes of nutrition interventions. Prerequisite: Student must be classroom teacher or consent of instructor. LEC.

DN 822. Management Dietetics & Nutrition I. 2 Hours.

Managerial skills in health care quality improvement and food service are practiced. Students are typically enrolled in DN 827 Practicum supervised practice experiences associated with the dietetic internship. Prerequisite: food service systems or commensurate practical experience. LEC.

DN 823. Management Dietetics & Nutrition II. 2 Hours.

Managerial style is related to food policy, financial benchmarking and applied nutrition practice. Students are typically enrolled in DN 827 Practicum supervised practice experiences associated with the dietetic

internship. Prerequisite: food service systems or commensurate practical experience. LEC.

DN 825. Medical Nutrition Therapy I. 3 Hours.

Course content introduces the student into the concepts of an intermediate study of nutritional therapy of disease. Course content includes evidence-based practice in prevention and nutritional management of diseases. Patient assessment and medical chart documentation are covered. Elements of pathology and biochemistry of the nutrition-related problems are integrated into course topics. This course is designed for students enrolled in the dietetic internship, but students from other departments may enroll with consent of instructor. Prerequisite: Undergraduate coursework in nutrition, diet therapy, biochemistry and physiology or consent of instructor. LEC.

DN 826. Medical Nutrition Therapy II. 3 Hours.

Course content includes current nutrition theory and evidence-based practice in prevention and treatment of disease. Advanced therapies and patient management in nutrition support will be discussed. Course topics include pediatric nutrition, obesity, cardiovascular disease, diabetes, cancer, renal disease, and gastrointestinal diseases. Elements of pathology and biochemistry of the nutrition-related problems are integrated into course topics. This course is designed for students enrolled in the dietetic internship, but students from other departments may enroll with consent of instructor. Prerequisite: Undergraduate coursework in nutrition, diet therapy, biochemistry and physiology; DN 825; or consent of instructor. LEC.

DN 827. Practicum in Dietetics and Nutrition. 1-10 Hours.

Supervised practice experience for graduate level students to fulfill the requirements for the Dietetic Internship. Experiences take place in hospitals, clinics, community health care agencies, and other practice settings in which dietetics and nutrition services are provided. Prerequisite: Admission to the graduate program, permission of dietetic internship director or course instructor. LEC.

DN 828. Clinical Education in Dietetics. 2-3 Hours.

A study of teaching methods appropriate for use in a clinical setting. Emphasis on development of instructional objectives, learning situations, and methods of evaluations to be used in clinical teaching in dietetics. Prerequisite: Consent of instructor. LEC.

DN 829. Nutrition and Aging. 3 Hours.

An overview of nutrition and the aging process. Physiological, psychological, and sociological aspects of aging, theories of aging, internal and external factors related to nutrient intake, and nutrient needs will be considered. LEC.

DN 830. Food Technology. 2-3 Hours.

Consideration of current food processing methods and the factors affecting the palatability and nutritive values of human foods. Course includes pertinent information regarding the protection of the food supply. LEC.

DN 834. Methods of Research in Nutrition. 3 Hours.

A study of basic research terminology and designs commonly used in nutrition research. Topics include: research on animals, tissue culture and human subjects; qualitative, quantitative and outcomes research; ethical issues in research; dissemination of research findings; and appropriate use of research findings. Prerequisite: Consent of instructor. Same as DIET 834. LEC.

DN 836. Biochemical, Physiological, and Genetic Aspects of Human Nutrition. 3 Hours.

The topics covered will examine the integration of biochemistry, physiology, genetics, and nutrition. Emphasis will be placed on developing an understanding of how the combination cellular structure and function

is related to the metabolic needs of the cell and its response to the environment. The integrated approach will form a basis for evaluating nutritional needs in humans. Prerequisite: courses in nutrition, physiology, and biochemistry, or consent of instructor. Same as DIET 836. LEC.

DN 837. Nutrition in Diabetes. 3 Hours.

(3 hours) An in-depth study of diabetes management with emphasis in nutrition care. Topics will include diabetes pathophysiology, clinical care guidelines, basic pharmacology, clinical nutrition education and counseling strategies, and nutrition care planning. Prerequisite: A course in medical nutrition therapy or consent of instructor. LEC.

DN 838. Advanced Medical Nutrition Therapy. 3 Hours.

This course evaluates current issues in medical nutrition therapy. Course content includes evidence based analysis, the role of diet in disease management including factors related to disease pathophysiology, nutritional assessment and medical nutrition management of specific disease states. Prerequisite: undergraduate medical nutrition therapy, biochemistry, physiology, or consent of the instructor. Same as DIET 838. LEC.

DN 839. Clinical Aspects of Nutrition Support. 3 Hours.

Specialized nutrition assessment and support. Review of energy expenditure and substrate utilization in specific disease states. Current methods for the initiation and management of enteral and parenteral nutrition therapy including access, metabolic and mechanical complications. Evaluation nutrition support methodology in selected disease states. LEC.

DN 840. Advanced Topics in Nutrition. 1-2 Hours.

Reading and preparation of a paper and/or oral presentation on a selected subject in nutrition. Prerequisite: Consent of instructor. LEC.

DN 841. International Nutrition. 1-3 Hours.

A study of global public health and nutrition concerns in various nations, assessment of nutritional status of diverse populations, international health and nutrition organizations, policies, and interventions. We explore the roles of dietitians, nutritionists, and others in creating and implementing international public health and nutrition policies and interventions. To enroll in the course, you must be a student in the Graduate Certificate Dietetic Internship Program, the Dietetics and Nutrition Master of Science Program, or the Great Plains IDEA, or have the consent of the instructor. Cross-listed with DIET 841. LEC.

DN 842. United States Public Health Nutrition. 1-3 Hours.

A study of US public health and nutrition concerns in diverse US populations, assessment of nutritional status in commonalities, health communication, nutrition policies and community based nutrition interventions. Exploration of the roles of dietitians, nutritionists, and others in developing and delivering nutrition policies and interventions in US communities. Prerequisite: Must be a student in the Graduate Certificate Dietetic Internship Program, the Dietetics and Nutrition Master of Science Program, or the Great Plains IDEA, or have the consent of the instructor. LEC.

DN 854. Special Problems in Dietetics and Nutrition. 1-4 Hours.

Directed study of special problems in nutrition or nutrition care. This course provides for the individual or group study of special problems. Through directed readings, investigations, and projects, the student acquires information with reference to questions in dietetics and nutrition not covered in organized courses. LEC.

DN 857. Motivational Interviewing in Public Health Settings. 1 Hour.

The course is designed to introduce participants to Motivational Interviewing, its concepts, and to the subsequent skills required for

helping people to change. This course will be cross-listed with PRVM 857. LEC.

DN 860. Collaboration Strategies in Health Care. 1 Hour.

Persuasion and negotiation techniques: skills to evaluate and promote collaboration and goal achievement in a multidisciplinary health care team; analysis of communication styles and strategies to achieve mutual beneficial outcomes. LEC.

DN 862. Maternal and Child Nutrition. 3 Hours.

Critical examination of behavioral, physiological, and public health issues impacting dietary and nutritional factors that support normal growth and development. Course content focuses on the early stages of the life cycle: gestation, lactation, infancy, preschool, school age and adolescence. Topics include the fetal programming hypothesis, growth and nutritional requirements, breast and formula feeding of infants, infant weaning, and eating behaviors that lead to normal growth, growth faltering, and pediatric obesity. Prerequisite: Consent of the instructor. LEC.

DN 865. Nutrition in Sports and Exercise. 3 Hours.

Exercise physiology and nutrient requirements in sports and exercise: macronutrient, micronutrient and fluid needs of athletes engaged in specific sports, pre/post exercise meals, gender specific requirements, role of ergogenic aids, eating disorders, and role of exercise in weight management and chronic disease. Prerequisite: Biochemistry and/or exercise physiology class or permission of the instructor. LEC.

DN 870. Health Behavior Counseling. 3 Hours.

Theoretical and applied issues in health behavior counseling. Students will learn the theories of behavior change and how to apply these to health care issues. Specific health behaviors (i.e., dietary changes, smoking cessation, exercise adherence) will be discussed in the context of chronic disease for children, adults, and the elderly. Effective methods of counseling patients and promoting changes on an individual and small group basis will be presented. LEC.

DN 875. Pediatric Clinical Nutrition. 3 Hours.

Examines physiological, biochemical and nutritional aspects of disease processes relevant to infants and children up to 18 years of age. Medical nutrition therapy for a variety of medicine conditions found in this population will be discussed including inborn errors of metabolism, food hypersensitivity, obesity, and diseases of the major organ systems. Prerequisite: DN 826: Applied Clinical Nutrition or equivalent or consent of instructor. LEC.

DN 876. Intervention for the Prevention & Management of Obesity. 3 Hours.

This course emphasizes obesity in a population group ranging from childhood to the adult. Course materials will examine the impact of obese conditions on disease development throughout the life cycle. The course will critically analyze current evidence focused on interventions used in the behavioral and clinical management of overweight and obese individuals in community and clinical settings. Prerequisite: Consent of instructor. Same as DIET 876. LEC.

DN 880. Dietary and Herbal Supplements. 2-3 Hours.

Explores the safety and efficacy of botanical/herbal and dietary supplements in health applications including dietary supplementation in the prevention and treatment of chronic disease. Prerequisite: Human physiology is advisable. LEC.

DN 881. Introduction to Dietetics and Integrative Medicine. 3 Hours.

Introduction to principles guiding integrative and functional Medical Nutrition Therapy; assessing, diagnosing, intervening, monitoring, and evaluating an individual client to restore function; focusing on the unique nutritional imbalances characteristic of chronic disease pathophysiology; supporting individuals with persistent symptoms; preventing chronic

disease. Prerequisite: Introductory genetics, medical nutrition therapy, or consent of instructor. LEC.

DN 882. A Nutrition Approach to Inflammation and Immune Regulation. 3 Hours.

Inflammation and immune system dysregulation is common in chronic disease. The course presents the integrative nutrition approach to identify the underlying causes of inflammatory and immune-related conditions and associated nutritional influences; applies individualized nutritional interventions, as powerful modulators of the pathophysiology of inflammatory and immune responses. Prerequisite: Medical nutrition therapy, genetics or consent of instructor. LEC.

DN 884. Diet, Physical Activity & Cancer. 3 Hours.

Multi-disciplinary approach, introductory cancer biology, Cancer epidemiology and risk factors. Dietary and environmental causation and prevention. Cancer in various organ systems. Nutrition therapy in Oncology. Nutrition implications in cancer treatments. Lifestyle factors and cancer survivorship. Exercise programming adaptations. Analysis of primary literature. Prerequisite: Permission of instructor. LEC.

DN 885. Nutritional Biochemistry. 3 Hours.

Course content facilitates the understanding of advanced biochemical principles applied to human nutrition. Topics include protein structure, bioenergetics, enzyme function, nutrient digestion, absorption and metabolism, metabolic regulation and intermediary metabolism, cellular signaling, and genomics encompassing nucleotide metabolism, gene expression and gene regulation. Prerequisite: Undergraduate biochemistry or consent of instructor LEC.

DN 890. Graduate Research. 1-4 Hours.

Individual investigation of special problems in dietetics and nutrition or hospital dietary administration approved by the student's advisor or advisory committee. Investigation involves original research. RSH.

DN 895. Advanced Macronutrients and Integrated Metabolism. 3 Hours.

Energy containing macronutrients and fiber presented from the perspective of their importance in human nutrition. Structural properties, digestion, absorption and metabolism are emphasized. Fuel utilization in response to food intake and exercise, cellular and whole-animal energetic and energy balance integrate metabolism. Students take an active role in presenting and discussing and exhibit advanced skills in analysis and presentation. Prerequisite: BCHM 702 or Equivalent. LEC.

DN 896. Advanced Micronutrients and Integrated Metabolism. 3 Hours.

Vitamins and minerals presented from the perspective of their requirements as nutrients for normal human physiological functions with emphasis on their underlying roles in structure, function and metabolism. Students take an active role in selecting, presenting and discussing recent published research and to exhibit advanced skills in analysis and presentation. Prerequisites BCHM 702 or equivalent. LEC.

DN 897. Micronutrient Research in Human Nutrition. 1 Hour.

This course requires students to design a research study on a vitamin or mineral. Students submit a written proposal and present it orally and defend the proposal in class. Students will be evaluated on the basis of plausibility, feasibility and originality of the proposed research. Co-requisite DN 896. Prerequisite: Consent of Instructor. LEC.

DN 899. Thesis. 1-6 Hours.

Scholarly essay based on research, written under the guidance of the student's advisor. Credit given upon meeting thesis requirements for the master's degree. Prerequisite: Consent of advisor. THE.

DN 900. Techniques in Nutrition Research. 3 Hours.

A series of seven laboratory modules emphasizing quantitative methods and experimental analysis. The series of modules will be team taught by departmental faculty. Each module requires data collection, data analysis, and written interpretation or report. Instrumentation, dietary assessment software utilization and cellular microtechniques will be emphasized. Students will be responsible for learning one technique practiced in an outside laboratory setting. Student will rotate between the module sequence based on the number of students enrolled in the class. Prerequisite: DN 895 and DN 896 or permission of instructor of record. LEC.

DN 901. Graduate Seminar in Nutrition. 1 Hour.

Advanced course examining current research topics in nutrition. Extensive student and faculty interaction is emphasized utilizing lectures, class discussion of selected scientific readings and oral presentations. Prerequisite: Admission to PhD program in Dietetics and Nutrition or permission of instructor. LEC.

DN 980. Nutrigenomics and Nutrigenetics in Health and Disease. 3 Hours.

Nuclear receptors and their mechanisms of action, nutritional control of gene expression and functional genomic studies with relationships to nutrient intake and polymorphisms. Prerequisite: DN 836, DN 895, DN 896 or permission of instructor. LEC.

DN 990. Doctoral Research. 1-9 Hours.

Original and independent investigation approved by and conducted under the supervision of the student's advisor or advisory committee. This course is in partial fulfillment of the requirements for the Ph.D. degree. Prerequisite: Corequisite: Restricted to Dietetics Nutrition Ph.D. candidates, or consent of DN advisor. Students must have completed the qualifying exam. LEC.

DN 999. Dissertation. 1-6 Hours.

Preparation of the written dissertation based upon original research and in partial fulfillment of the requirements for the Ph.D. degree. Prerequisite: DN 990 or consent of advisor. LEC.

Health Information Mgmt Courses

HEIM 177. First Year Seminar. 3 Hours.

A limited-enrollment, seminar course for first-time freshmen, addressing current issues in health data and management. Course is designed to meet the critical thinking learning outcome of the KU Core. First-Year Seminar topics are coordinated and approved by the Office of First-Year Experience and the University Core Curriculum Committee. Prerequisite: First-time freshman status. LEC.

HEIM 210. Introduction to Healthcare. 1 Hour.

This course is an introductory overview of the healthcare system in the United States. The content includes information on the organizational structure and settings in healthcare, the healthcare team, reimbursement, health policy, legal aspects of healthcare including privacy and security, and the health information technology. This course is taught in a hybrid format and requires access to a computer. Open to all students. LEC.

HEIM 230. Medical Terminology. 3 Hours.

A study of the language of medicine including word construction, definitions, medical abbreviations, and use of terms related to various areas of medical science and health professions. Course requires students to be able to break down medical terms, understand their meanings and pronounce them correctly. This online course is designed for students interested in clinical and health professions. LEC.

HEIM 325. Pharmacology. 2 Hours.

This introduction to pharmacology course is intended to provide the student with the background information necessary to practice within the field of Health Information Management. The course covers the fundamentals of pharmacology, including pharmacokinetics and pharmacodynamics. The classification of drugs, the use of drug reference materials, and the mechanisms of therapeutic and adverse responses to drugs will be covered in the course. This course will also introduce the processes used for drug approval in the United States. Prerequisite: Permission of the instructor. LEC.

HEIM 401. Introduction to Health Information Management (HIM). 3 Hours.

This course introduces students to the foundational concepts of health record content, characteristics and requirements, along with the operational processes designed to support and safeguard the healthcare data and information contained therein. Joint Commission survey process is also included. Industry standard software applications are used for applied, hands-on learning in this course. LEC.

HEIM 415. Healthcare Delivery Systems. 3 Hours.

This course is an in-depth overview of the United States healthcare system and focuses on the structure and function of services across settings. Special emphasis is placed on the history of healthcare, reimbursements and financing, health policy, outcomes (cost, quality, access) and the integration of care across delivery settings using health information technology. LEC.

HEIM 420. Legal Aspects of Healthcare. 3 Hours.

This course introduces the student to some of the basic legal principles found in healthcare and health information management (HIM). Fundamentals of law including statutory, regulatory, and judiciary practices are reviewed in the context of HIM including tort and liability. Emphasis is placed on HIPAA regulations. Patient legal rights and responsibilities as related to their healthcare are included, as well as fraud and abuse prevention and compliance. LEC.

HEIM 435. Pathophysiology for Health Professionals. 3 Hours.

An in-depth study of the fundamentals of medical science, medical essentials and the language of medicine, signs, symptoms, and test findings of disease processes and the current therapy employed in the treatment of diseases. Prerequisite: Courses in Anatomy lab, Physiology lab, and Medical Terminology or consent of the instructor. LEC.

HEIM 450. Introduction to Professional Practices Experiences. 1 Hour.

This course is designed to prepare students and develop the skills required for experiences outside of the classroom environment. The emphasis is on professional behavior for health information management professionals in the workplace. The course also introduces students to the application of electronic health record concepts. The content is intended to prepare students for site visits, professional practice experiences, the internship, as well as their future careers. LEC.

HEIM 485. Independent Study in Health Information Management. 1-10 Hours.

The content will vary depending on material appropriate to students. May be repeated for additional credit utilizing a variety of projects and special assignments. Prerequisite: Permission of the program director. FLD.

HEIM 501. Information Resources and Professional Development. 2 Hours.

This course prepares students to effectively utilize information resources and technology on an academic medical center campus to foster success in the Health Information Management program, professional practice experiences and the health professions. Students will learn to apply

software applications, project management strategies, and professional writing and literacy skills. This course has a special emphasis on professionalism, self-awareness, communication, collaboration and critical thinking. LEC.

HEIM 510. Professional Practice Experience / Lab I. 1 Hour.

Through supervised learning situations, students are given opportunities to visit different types of healthcare facilities in the area. These opportunities vary from year-to-year based upon availability. Opportunities might include (but not be limited to) developing competence while practicing a specific HIM function in an actual HIM department, exploring nontraditional HIM career roles, or visiting with and interviewing a long term care, behavioral health, rehabilitation, or managed care HIM department manager. Prerequisite: Successful completion of Junior-level HIM academic courses or permission from instructor. LEC.

HEIM 525. Healthcare Database & Architecture. 3 Hours.

This course is designed to help students understand databases and database management systems. Students will learn to model and understand database design, in conjunction with learning methods to structure data as records, tables, or objects. Students will also learn how query languages are used for searching, sorting, reporting, and other "decision support" activities to best utilize the available data. Along with acquiring knowledge fundamental to management of the electronic health record (EHR), students will develop general technical knowledge to become capable health information professionals. LEC.

HEIM 540. Health Information Systems. 3 Hours.

The increased use of technology to support health data and information continues to evolve. This course introduces students to core topics and concepts in health informatics, emphasizing the implementation and management of health information systems. Students learn the conceptual framework and foundational elements of health informatics, selecting and implementing systems through the Systems Development Life Cycle (SDLC), data and information infrastructure, privacy and security aspects, human-computer interaction frameworks and usability concepts, and current trends and supporting technologies. LEC.

HEIM 565. Clinical Terminologies and Classifications I. 4 Hours.

This course introduces classification systems and terminologies used in healthcare and the relationship of these systems to patient care, research, and reimbursement systems. Course content provides study and application of coding guidelines, conventions, and rules of coding systems. Prerequisite: HEIM 435 or permission of the instructor. LEC.

HEIM 567. Quality and Performance Improvement in Healthcare. 3 Hours.

This course provides instruction on the principles of quality (QI) and performance improvement (PI) in the context of healthcare. PI drivers, models, techniques, and processes are covered including workflow reengineering. QI program organization, management and effectiveness are addressed. This course also includes content on patient safety, risk management, resource management and assessment of provider competence. LEC.

HEIM 570. Introduction to Healthcare Management. 3 Hours.

This course introduces theoretical and applicable concepts of management with an emphasis on managing in healthcare organizations. Students explore traditional management roles as well as leadership concepts. Course content depicts management in the context of a complex stakeholder environment evidenced in the healthcare system of the United States. LEC.

HEIM 571. Human Resource Management in Healthcare. 3 Hours.

Through the course students will have the opportunity to obtain working knowledge of human resource management. Technology and the

continuing uncertainty of the economy have affected many aspects of human resource management; a number of tasks formerly performed by an HR office are now the purview of department managers. The course will familiarize students with the environment in which HR functions and the tasks involved in managing people. Topics include: social sustainability, culture, vision, staffing needs analysis, recruiting and selecting, training, developing, retaining, motivating, and legal rights of the people within the rapidly changing business environment. Prerequisite: HEIM 570 Healthcare Management. LEC.

HEIM 575. Applied Statistics and Research Methods in Healthcare. 3 Hours.

Emphasis is on the statistical analysis of healthcare data. Content includes hospital-based statistics, an introduction to epidemiological concepts, research design and methodology, research ethics and protocol, hypothesis testing, data management, analysis and presentation. Prerequisite: MATH 365 Elementary Statistics, or similar. LEC.

HEIM 585. Healthcare Reimbursements & Financing. 3 Hours.

This course examines complex financial systems within the United States healthcare system. Students explore content related to healthcare financing, reimbursement, and revenue cycle management, to include regulatory and/or policy initiatives and operational considerations for healthcare organizations. Prerequisite: Accounting or permission from instructor. LEC.

HEIM 604. Professional Practice Experience / Lab II. 2 Hours.

Provides a laboratory/professional practice experience setting for the application of coding, reimbursement and revenue cycle management-related practices with potential opportunity to participate in interprofessional activities. This is a two-credit hour lab. Prerequisite: HEIM 565, HEIM 585, and HEIM 635 or permission of the instructor. LAB FLD.

HEIM 635. Clinical Terminologies and Classifications II. 3 Hours.

This course offers continued study of classification systems and terminologies used in healthcare and the relationship of these systems to patient care, research, and reimbursement systems. This course includes an introduction to the role of mapping between the various classification systems, nomenclatures and clinical terminologies used in healthcare. Prerequisite: HEIM 565 or permission of the instructor. LEC.

HEIM 661. Management Principles in Health Care. 3 Hours.

Introduction to basic principles of management and education and their application in the current healthcare environment. Course content includes: management, quality issues, budgeting, personnel issues, evaluation and application of management concepts, and educational methodologies. Cross listed with CLS 661 and RESP 661. Prerequisite: Admission to the Health Information Management Program or permission of the instructor. LEC.

HEIM 665. Topics in Health Information Management. 2 Hours.

This course will utilize case studies, student discussions and guest presentations to address the latest developments in the management of health information. Students will examine key issues and trends within HIM through a series of seminar topics and presentations. LEC.

HEIM 670. Independent Study in Health Information Management. 1-10 Hours.

The content will vary depending on material appropriate to students. May be repeated for additional credit utilizing a variety of projects and special assignments. Prerequisite: Permission of the program director. LEC.

HEIM 671. Strategic Leadership in Healthcare. 3 Hours.

This course applies key concepts in personal, professional and organizational leadership for healthcare management. Special emphasis

is on strategic leadership and planning for enterprise-wide health information strategies. Student will focus on leadership styles with an emphasis on self-discovery and professional development within an ever-changing environment. LEC.

HEIM 676. Healthcare Analytics. 3 Hours.

This course covers data-driven, computer-based tools and data analysis techniques that aid decision-making in healthcare. Effective use of data analysis increases the quality of strategic and operative planning and reduces the time used for decision-making processes. The course focuses on data-driven techniques and tools including such topics as medical coding systems, database fundamentals, business performance monitoring (managerial dashboards), and data mining applied to the healthcare industry. A number of data mining and predictive modeling approaches are discussed to address specific issues in healthcare. LEC.

HEIM 679. Information Governance in Healthcare. 3 Hours.

This course examines the role of health information managers as facilitators and champions of information governance in healthcare organizations. Course content includes an exploration of the topic of information governance, as well as introduces strategic considerations for enterprise processes, policies and procedures, standards, and metrics to support information governance efforts. Information is considered throughout the course as a strategic asset for organizational optimization. External users of information and related implications are also discussed. LEC.

HEIM 680. Management Internship. 3 Hours.

This internship experience provides the student with a management capstone experience in the activities and responsibilities of the health information administrator. Students are responsible for all costs to include: room, board, and transportation. Management sites are selected based on the experience and credentials of the student. Prerequisite: Successful completion of all HIM professional coursework and/or permission of the instructor. LEC.

HEIM 681. Management Practicum. 3 Hours.

This practicum experience provides the student with a management capstone experience in the activities and responsibilities of the health information administrator. The specific practicum topics are selected based on the experience and credentials of the student. Prerequisite: Successful completion of all HIM professional coursework and/or permission of the instructor. LEC.

Hearing and Speech Courses

AUD 805. Introduction to Clinical Research. 1 Hour.

The course will provide a comprehensive overview to clinical research. The student will gain an understanding of how to develop clinical research questions including protocol design and the factors that should be considered in initiating a clinical research study. This will include biostatistical considerations, the recruitment of study participants, regulatory issues, and data management, and defining measures and instruments. Students will gain knowledge of how to define clinical research among the various institutional entities involved with clinical research at the University of Kansas Medical Center such as the Research Institute (RI), General Clinical Research Center (GCRC) and the Human Subjects Committee (HSC). Additionally, one component of the course will focus on how to apply for funding (grantsmanship), critical appraisal of research studies, and how to present research data. Prerequisite: Consent of instructor. LEC.

AUD 810. Diagnostic Audiology. 4 Hours.

Audiometric calibration, pure tone and speech testing, analysis of audiograms, middle ear testing. LAB.

AUD 811. Hearing Disorders. 3 Hours.

A study of disorders of the auditory system including anatomical, physiological, perceptual, and audiological manifestations of pathologies affecting hearing. Prerequisite: AUD 810 and AUD 829. LAB.

AUD 813. Psychoacoustics and Theories of Hearing. 3 Hours.

A study of relations between common acoustic stimuli and the responses they elicit; consideration of sensory scales, noise phenomena, and speech intelligibility. Prerequisite: AUD 829. LEC.

AUD 814. Hearing Conservation. 2 Hours.

A study of the major components of hearing conservation programs in industrial, educational, and military settings. Forensic audiology issues related to occupational hearing loss are included. Prerequisite: AUD 810 and AUD 829. LAB.

AUD 816. Speech Perception. 2 Hours.

Acoustic and perceptual characteristics of phonemes, words, and connected speech for normal-hearing adults and infants; how speech perception is assessed clinically and is affected by hearing loss, aging, use of amplification, talker differences, and linguistic factors. (Same as SPLH 716.) LEC.

AUD 817. Pediatric Audiology. 3 Hours.

Normal and pathological development of the auditory system; pediatric audiometric testing; auditory and communication aspects in the habilitation of hearing-impaired children. Prerequisite: AUD 810. LAB.

AUD 818. Vestibular Systems and Disorders. 3 Hours.

Study of the anatomy and physiology of the normal peripheral and central vestibular system; clinical assessment of vestibular disorders; vestibular rehabilitation. LEC.

AUD 819. Hearing Aids I. 3 Hours.

Study of the components, function, fitting, and performance characteristics of hearing aids, applications of amplification in rehabilitative audiology. Prerequisite: AUD 810. LEC.

AUD 820. Rehabilitative Audiology and Counseling. 3 Hours.

Principles and methods of auditory, communication, and social assessment and intervention with hard of hearing and deaf adults, children, and their families. Prerequisite: AUD 810 and AUD 819 or equivalent. LEC.

AUD 821. Hearing Aids II. 3 Hours.

The advanced study of the theoretical bases, techniques, and clinical application of hearing aids and their assessment. Participants will review, present, and discuss contemporary issues in hearing aid literature and research. Prerequisite: AUD 819. LEC.

AUD 822. Electro-Acoustics and Instrumentation. 3 Hours.

A study of the generation, control and measurement of the simple and complex sounds essential to clinical audiology and hearing research. LAB.

AUD 823. Cochlear Implants and Hearing Assistance Technologies. 2 Hours.

Through lecture and discussion format, this course will cover the principles and methods of assessment, candidacy, surgery, programming and rehabilitation of patients receiving cochlear implants. In addition, hearing assistance technologies such as large area systems and alerting devices will be covered with emphasis on classroom amplification. Prerequisite: AUD 819 and AUD 821 or permission of instructor. LEC.

AUD 824. Central Auditory Processing. 2 Hours.

The study of the anatomy and physiology of the central auditory system. Analysis and review of the diagnostic procedures and the therapeutic strategies for central auditory processing disorders. LEC.

AUD 828. Genetics and Hearing Loss. 2 Hours.

The fundamentals of human genetics as related to hearing loss, including patterns of inheritance, genotypic and phenotypic characteristics of the major forms of syndromic and nonsyndromic hearing loss; genetic counseling, genetic testing, possible genetic treatment, and issues related to them; resources for keeping up with this rapidly changing field. Prerequisite: Permission of instructor. LEC.

AUD 829. Anatomy and Physiology of the Hearing and Vestibular Mechanisms. 3 Hours.

Advanced study of the anatomical and physiological properties of the human hearing and vestibular mechanisms. LEC.

AUD 843. Clinical Practice in Audiology. 1-6 Hours.

Supervised clinical work at the University and/or University Medical Center audiology clinics, or affiliated, off-campus practicum sites. Prerequisite: Permission of instructor. FLD.

AUD 846. Independent Study in Problems in Audiology. 1-10 Hours.

IND.

AUD 851. Auditory Evoked Potentials. 3 Hours.

Theoretical bases, techniques, and clinical applications for auditory evoked potentials including electrocochleography, auditory brainstem response, middle and late latency and cognitive responses. Prerequisite: AUD 810, AUD 822, AUD 829, or permission of instructor. LEC.

AUD 853. Pharmacology for Audiology. 2 Hours.

Presentation and discussion topics including: basic pharmacology (pharmacokinetics and pharmacodynamics), mechanisms of ototoxicity, selected ototoxic agents, drugs used in otolaryngology, and a review of patient management strategies. Prerequisite: Enrollment in the Au.D. or Ph.D. audiology program or permission of instructor. LEC.

AUD 858. Business Audiology. 2 Hours.

An introduction to audiology business practice principles. Operational functions of the audiology clinic will be reviewed, including human resources, marketing, legal and ethical practice concerns, billing, coding and reimbursement. Prerequisite: enrollment in the Au.D. or Ph.D. audiology program or permission of instructor. LEC.

AUD 899. Thesis. 1-10 Hours.

THE.

AUD 940. Seminar in Audiology: _____. 1-4 Hours.

Advanced study of selected topics in audiology such as (but not limited to): cochlear micromechanics and other physiological processes; psychoacoustics, speech perception, cochlear implants, scientific reading, etc. Prerequisite: Enrollment in the Audiology Ph.D. or Au.D. program or permission of instructor. SEM.

AUD 941. Grand Rounds in Audiology. 1 Hour.

Presentations/discussion of clinical case studies and professional issues in Audiology. Au. D. students and audiology faculty members will participate in these sessions. DIS.

AUD 942. Investigation and Conference. 1 Hour.

Readings and case study analysis in preparation for the comprehensive exam. Enrollment is restricted to Au.D. students. Prerequisite: 2 years of full-time enrollment in the Au.D. program. IND.

AUD 944. Clinical Rotation. 1-6 Hours.

Supervised clinical work at the University and/or University Medical Center Audiology Clinics, or affiliated off-campus sites. The Clinic Rotation is intended to prepare students for entry into their Clinical Externship and foster increasing independence. Clinical skills required are defined in standards set forth by the American Speech-Language Association. FLD.

AUD 945. Clinical Externship. 1-9 Hours.

Supervised clinical work at the University of Kansas and/or KUMC audiology clinics, or affiliated, off-campus sites. The Clinical Externship is intended to refine clinical skills, increase clinical independence, and ensure that clinical skills meet the certification standards in audiology set forth by the American speech-Language-Hearing Association. Open to 3rd and 4th year Au.D. students. Approval from Instructor needed for 3rd year students. PRA.

AUD 999. Doctoral Dissertation. 1-12 Hours.
THE.**Hearing and Speech Courses****SLPD 801. Seminar on Evidence-Based Practice in Speech-Language Pathology and Other HealthSciences I. 3 Hours.**

This course is designed to give students a thorough understanding of evidence-based principles and procedures so that they could provide evidence-based services in a clinical setting. It is also designed to prepare students to assume a position of leadership in which they would be required to promote and teach evidence-based practices to their staff clinicians. Prerequisite: Consent of instructor. SEM.

SLPD 802. Seminar in Evidence-Based Practices in Communicative Disorders. 3 Hours.

In this course, students apply information covered in SLPD 801 to their areas of primary concentration. In-class and on-line sessions are led by students and guests from the university and community. Student presentations include primarily reports of progress on their semester project, a meta-analysis dealing with a clinical issue of their choice. Students report on status of (a) their development of the research question; (b) details of the literature search; (c) evaluation of relevant studies; (d) determination of level of evidence provided by the studies; (e) calculation and aggregation of effect sizes; and (f) conclusions regarding the impact of the analysis on clinical practice. Guest presenters, including program and university faculty as well as clinic administrators and practitioners from the community, lead discussions on advantages of and problems with using evidence-based practices to help them make decisions in the speech-language clinic. Students will enroll in the class with class instructor. They will identify a lab instructor as well. LEC.

SLPD 804. Clinical Practice in Speech-Language Pathology: Advanced Training for the Experienced Clinician. 1-3 Hours.

Students participate in clinical experiences (assessment and/or treatment) related to their primary and/or secondary area of concentration. Clinical experiences in which the student learns about a particular patient population, standardized and non-standardized assessment measures, instrumentation, computer software, devices, and/or treatment techniques and strategies are possible. Prerequisite: certification in speech-language pathology from the American Speech-Language-Hearing Association. CLN.

SLPD 805. Independent Study in Speech-Language Pathology. 1-3 Hours.

Investigation of special topics by individual SLPD students. Prerequisite: Consent of Instructor. LEC.

SLPD 903. Capstone Project. 1-6 Hours.

The Capstone Project reflects the culmination of academic and advanced clinical study and may take many forms (e.g., small original research study, original analysis of data collected by another researcher, research literature meta-analysis, program design and analysis, etc.). The Capstone project will comprise a written report that involves both literature and field activity. A Capstone project represents the research and application of knowledge, as well as an articulated plan for dissemination of the

outcomes. Students will enroll in this course for a total of 6 credits. Prerequisite: Consent of Instructor. RSH.

Respiratory Care Courses**NMED 70. Introduction to Nuclear Medicine and Medical Law and Ethics for the Imaging Professional. 3.3 Hours.**

An introductory overview of the field of nuclear medicine technology with includes medical terminology for clinical nuclear medicine, patient and nursing skills including phlebotomy and vital signs, departmental organization and function, and a basic overview of applied mathematical and statistical analysis used in clinical nuclear medicine. This course will also introduce to the imaging profession the legal aspects to patient care regarding patient rights, ethical theories, risk management, quality patient care. The student will participate in group discussion. Prerequisite: Acceptance into the Nuclear Medicine Training Program LEC.

NMED 71. Nuclear Chemistry and Physics. 2 Hours.

This course is designed to present the theories of nuclear chemistry and physics including theory of Bohr's atom, radiation production, decay, physical half life and interaction with matter, chemical reactions and equations, review of periodic chart of elements and trilinear chart of nuclides. Prerequisite: College Physics and College Chemistry along with acceptance into the Nuclear Medicine Training Program LEC.

NMED 72. Radiopharmacy I. 3.4 Hours.

This course is designed to present the aspects of radiopharmaceuticals including safety and handling, methods of localization, pharmacology, dose calculation and record keeping, methods of production, and quality control. The course will begin to identify the clinical uses of radiopharmaceuticals as this course will be a prerequisite for Radiopharmacy II. Prerequisite: Acceptance into the Nuclear Medicine Training Program LEC.

NMED 73. Clinical Procedures I. 2.4 Hours.

This course is taught in modules corresponding to organ systems of the body. This course provides instruction in Skeletal, Liver and Spleen, Hepatobiliary and Respiratory systems. Each module includes: review of anatomy and physiology, cross-sectional anatomy, clinical indications for nuclear imaging, nuclear imaging procedures including radiopharmaceuticals for current clinical practices, image interpretation and review. Prerequisite: Acceptance into the Nuclear Medicine Training Program. LEC.

NMED 74. Radiation Biology and Protection. 1.5 Hour.

This course is designed to provide the student with an understanding of the effects of radiation on the human body at the cellular, organ and whole body levels including late of effects of radiation exposure and the risk to benefits ratio. This course will provide the students with current federal and state regulations in regards to safe handling, disposal, record keeping, and licensing for the clinical use of radiation. Prerequisite: Acceptance into the Nuclear Medicine Training Program LEC.

NMED 75. Clinical Internship I. 6 Hours.

Through supervised learning situations in a clinical nuclear medicine imaging department the student will gain knowledge and be required to demonstrate competence in specific imaging of nuclear medicine procedures, radiopharmaceutical distribution, imaging instrumentation, patient safety, occupational safety, and quality control practices in the clinical setting. Prerequisite: Acceptance into the Nuclear Medicine Training Program CLN.

NMED 80. Nuclear Instrumentation, Medical Informatics and Quality Assurance. 2.5 Hours.

This course is designed to familiarize the students with basic non-imaging and imaging with nuclear medicine equipment in the clinic. This course

will include basic principles of operation, system configuration and performance characteristics of Scintillation cameras and PET systems, computers and quality control and assurance as required by manufacturer and regulatory agencies. It will introduce the student to various types of medical information systems and their uses in the medical imaging. Prerequisite: Acceptance into the Nuclear Medicine Training Program LEC.

NMED 82. Radiopharmacy II. 1 Hour.

This course is the advanced course to Radiopharmacy I. The students will have an understanding of the radiopharmaceuticals that are used in the clinical nuclear medicine department. This course will also cover monoclonal, polyclonal, peptides, PET, therapeutic radiopharmaceuticals, pharmacology, as well as advancement in research that is current on radiopharmaceuticals to be used in the nuclear clinical setting. Prerequisite: Radiopharmacy I LEC.

NMED 83. Clinical Procedures II. 8 Hours.

This course is taught in modules corresponding to organ systems of the body. This course provides instruction in Genito-Urinary, Endocrine, EKG, Nuclear Cardiology, Infection/Tumor, Gastro-Intestinal, Neurology, PET, CT, Miscellaneous procedures, and Non-Imaging In-Vivo. Each module includes: review of anatomy and physiology, cross-sectional anatomy, clinical indications for nuclear imaging, nuclear imaging procedures including radiopharmaceuticals for current clinical practices, image interpretation and review. Prerequisite: Clinical Procedures I. LEC.

NMED 84. Clinical Internship II. 8 Hours.

Through supervised learning situations in a clinical nuclear medicine imaging department the student will gain knowledge and be required to demonstrate competence in specific imaging of nuclear medicine procedures, radiopharmaceutical distribution, imaging instrumentation, patient safety, occupational safety, and quality control practices in the clinical setting. Prerequisite: Clinical Internship I CLN.

NMED 85. Research Methods and Health Administration. 1 Hour.

This course is designed to familiarize the student in research methodology and advances in nuclear medicine for future developments. This course will also demonstrate the phases of research and research different divisions of the research cycle. The second portion of the class will familiarize the student with the administration techniques of health management. Health management will include billing, coding and budget and equipment selection processes of maintaining a nuclear medicine department. Prerequisite: Acceptance into the Nuclear Medicine Training Program. LEC.

NMED 90. Seminar. 2.5 Hours.

This course is designed to prepare the student for national boards in the field of nuclear medicine technology. The student will be responsible for in class review of nuclear clinical procedures, nuclear instrumentation and quality assurance, radiopharmacy, radiation protection and patient care. Students will be required to attend guest lectures and video conferences. Prerequisite: Clinical Procedures I and II, Radiopharmacy I and II, Nuclear Instrumentation and Quality Assurance, Radiation Biology and Protection and Introduction to Nuclear Medicine LEC.

NMED 91. Clinical Internship III. 6 Hours.

Through supervised learning situations in a clinical nuclear medicine imaging department the student will gain knowledge and be required to demonstrate competence in specific imaging of nuclear medicine procedures, radiopharmaceutical distribution, imaging instrumentation, patient safety, occupational safety, and quality control practices in the clinical setting. Prerequisite: Clinical Internship II CLN.

NMED 100. NMED Preceptorship. 10 Hours.

The student will be exposed to the Positron Emission Tomography and Computed Tomography clinical imaging modules of the field of Nuclear Medicine. The student will observe and perform specified imaging procedures in the clinical setting as well as inject radiopharmaceuticals for the imaging procedure. The student will be responsible for their own learning experience in the fields of Positron Emission Tomography and Computed Tomography. This preceptorship will provide the student with patient care clinical experience. Prerequisite: Board certified in Nuclear Medicine Technology by the American Registry of Radiologic Technologists (A.R.R.T.) or Nuclear Medicine Technology Certification Board (N.M.T.C.B) LEC.

Respiratory Care Courses

UTEC 50. Introduction to Diagnostic Ultrasound and Medical Law and Ethics for the Imaging Professional. 4.8 Hours.

An introductory overview of the field of Diagnostic Ultrasound Technology which encompasses medical terminology for the sonographer, patient and nursing skills, departmental organization and function and computer safety modules. In addition, the review of the department's ultrasound equipment with extensive review of functionality and design of each specific unit. Competency check-off required. This course will also introduce to the imaging professional the legal aspects to patient care. The student will participate in group discussions analyzing practical incidents that may occur in the clinical didactic training. Prerequisite: Acceptance into the Diagnostic Ultrasound Technology Program. LEC.

UTEC 51. Introduction to Sonography Principles and Instrumentation I. 1.5 Hour.

This course is designed to introduce the students to the basic terminology, the principles of propagation, beams and transducers and possible biological effects. Prerequisite: College Physics along with acceptance into the Diagnostic Ultrasound Technology Program. LEC.

UTEC 53. Abdominal I Sonography. 1.25 Hour.

This course is designed to introduce renal anatomy, physiology and pathology and the associated sonographic appearances. This includes clinical indications for ultrasound of the kidneys along with sonographic appearances of normal and disease processes with instrumentation, technique and protocols. Prerequisite: College anatomy and physiology along with acceptance into the Diagnostic Ultrasound Technology Program LEC.

UTEC 54. Small Parts Sonography I. 1 Hour.

This course is taught in modules corresponding to superficial structures of the body. This course provides instruction in Neck and Scrotal sonography. Each module includes: review of anatomy, physiology and pathology, clinical indications for sonography, sonographic appearances of normal and disease processes, along with instrumentation, technique and protocols. Prerequisite: College anatomy and physiology along with acceptance into the Diagnostic Ultrasound Technology Program. LEC.

UTEC 55. Gynecologic Sonography. 1.75 Hour.

This course is designed to educate the student on gynecologic anatomy, physiology and pathology and the sonographic appearances. This includes clinical indications for ultrasound along with instrumentation, technique and protocols. Prerequisite: College Anatomy and Physiology along with acceptance into the Diagnostic Ultrasound Technology Program LEC.

UTEC 56. Clinical Internship I. 4.4 Hours.

Through supervised clinical experience in the ultrasound imaging department the student will gain knowledge and be required to demonstrate competence in gynecologic and small part clinical imaging

and instrumentation. Prerequisite: Abdominal I, Small Part I and Gynecologic Sonography. CLN.

UTEC 60. Advanced Sonography Principles and Instrumentation II. 2.4 Hours.

This course is designed to educate the student on advanced areas of ultrasonic propagation principles, transducer parameters, instrumentation, interactive properties with tissues, possible biological effects and quality control procedures. Introduction to Color and Spectral Doppler is included. Prerequisite: Introduction to Sonography Principles and Instrumentation I. LEC.

UTEC 61. Obstetrical Sonography 1st Trimester. 1 Hour.

This course is designed to educate the student on normal maternal changes and fetal development throughout gestation. Embryonic and fetal anatomy, anomalies, pathology, biometry and the sonographic appearances are reviewed. Instrumentation, technique, and protocols are studied. Prerequisite: Gynecologic Sonography and college anatomy and physiology. LEC.

UTEC 62. Abdominal Sonography II. 2.8 Hours.

This course is taught in module corresponding to abdominal organs and compartments imaged in the abdomen. This course provides instruction in Liver, Biliary, Pancreas and Spleen. Each module includes: review of anatomy, physiology and pathology, clinical indications for sonography, sonographic appearances of normal and disease processes, along with instrumentation, technique and protocols. Abdominal Doppler of normal, diseased, and transplanted liver and pancreas will be included. Prerequisite: Abdominal Sonography I LEC.

UTEC 63. Obstetrical Sonography 2nd and 3rd Trimester. 1.75 Hour.

This course is designed to educate the student on normal maternal changes and fetal development throughout gestation. Embryonic and fetal anatomy, anomalies, pathology, biometry and the sonographic appearances are reviewed. Instrumentation, technique, and protocols are studied. Prerequisite: Obstetrical Sonography 1st Trimester LEC.

UTEC 64. Small Parts Sonography II. 1 Hour.

This course is taught in modules corresponding to superficial structures of the body. This course provides instruction in breast sonography. The module includes: review of anatomy, physiology and pathology, clinical indications for sonography, sonographic appearances of normal and disease processes, along with instrumentation, technique and protocols. Prerequisite: Small Parts Sonography I. LEC.

UTEC 65. Vascular Technology I. 1 Hour.

This course is taught in modules corresponding to selected sites in the vascular system. Each module includes review of: anatomy, physiology, pathology, and clinical indications for noninvasive vascular imaging and disease processes. Instrumentation, technique, and protocols are included. Prerequisite: Advanced Sonography Principles and Instrumentation II and Abdominal Sonography I. LEC.

UTEC 66. Clinical Internship II. 8.9 Hours.

Through supervised clinical experience in the ultrasound imaging department and perinatology department the student will gain knowledge and be required to demonstrate competence in gynecologic, obstetrical, small parts and abdominal clinical imaging and instrumentation including Color and Spectral Doppler evaluation. Prerequisite: Gynecologic Sonography, Small Parts Sonography I and II, Obstetrical 1st, 2nd 3rd Trimester Sonography and Abdominal Sonography I and II. CLN.

UTEC 70. Abdominal Sonography III. 1.3 Hour.

This course is taught in modules corresponding to abdominal organs and compartments imaged in the abdomen. This course provides instruction in the Retroperitoneum, Peritoneum, Gastrointestinal, Abdominal Wall and Great Vessels. Each module includes: review of anatomy, physiology and

pathology, clinical indications for sonography, sonographic appearances of normal and disease processes, along with instrumentation, technique and protocols. Prerequisite: Abdominal Sonography I and II LEC.

UTEC 71. Vascular Technology II. 3 Hours.

This course is taught in modules corresponding to selected sites in the vascular system. Each module includes review of: anatomy, physiology, pathology, and clinical indications for noninvasive vascular imaging and disease processes. Instrumentation, technique, and protocols are included. Prerequisite: Advanced Sonography Principles and Instrumentation II and Abdominal Sonography I, II and III. LEC.

UTEC 72. Clinical Internship III. 5.8 Hours.

Through supervised clinical experience in the ultrasound imaging department and perinatology department the students will gain knowledge and be required to demonstrate competence in gynecologic, obstetrical, small parts, abdominal and vascular clinical imaging and instrumentation including Color and Spectral Doppler evaluation. Prerequisite: Gynecologic Sonography, Small Parts I and II Sonography, Obstetrical 1st, 2nd 3rd Trimester Sonography, Abdominal Sonography I, II, III and Vascular Technology. CLN.

UTEC 80. Senior Seminar and Review I. 5 Hours.

This course is designed to prepare the student for national board examinations administered by the American Registry of Diagnostic Medical Sonographers in the field of ultrasound and vascular technology. The student will be responsible for "in class" review of ultrasound clinical procedures, including anatomy, physiology, disease processes and sonographic appearances, and sonography principles and instrumentation. In addition, the student will learn post graduate skills to enhance professional opportunities. Prerequisite: Gynecologic, Small Parts I and II, Obstetrical 1st, 2nd 3rd Trimester, and Abdominal Sonography I, II and III, Clinical Internship I, II, III and IV and Introduction to Sonography Principles and Instrumentation I and Advanced Sonography Principles and Instrumentation II and Vascular Technology I and II. LEC.

UTEC 81. Clinical Internship IV. 8.3 Hours.

Through clinical supervised learning situations in a clinical ultrasound imaging department the student will gain knowledge and be required to demonstrate competence in noninvasive vascular imaging procedures and all aspects of instrumentation. Prerequisite: Gynecologic Sonography, Small Parts I and II Sonography, Obstetrical 1st, 2nd 3rd Trimester Sonography, Abdominal Sonography I, II, III and Vascular Technology. CLN.

UTEC 90. Senior Seminar and Review II. 3 Hours.

This course is designed to prepare the student for national boards administered by the American Registry of Diagnostic Medical Sonographers in the field of ultrasound and vascular technology. The student will be responsible for in class review of ultrasound clinical procedures, including anatomy, physiology, disease processes and sonographic appearances, ultrasound physics and instrumentation and vascular physics and instrumentation. In addition, the student will learn post graduate skills to enhance professional opportunities. Prerequisite: Gynecologic, Small Parts I and II, Obstetrical 1st, 2nd 3rd Trimester, and Abdominal Sonography I, II and III, Clinical Internship I, II, III and IV and Ultrasound Physics and Instrumentation, Vascular Technology and Vascular Physics and Instrumentation and Senior Seminar and Review I. LEC.

UTEC 91. Clinical Internship V. 4.7 Hours.

Through clinical supervised learning situations in a clinical ultrasound imaging department the student will gain knowledge and be required to demonstrate competence in noninvasive vascular imaging procedures and all aspects of instrumentation. Prerequisite: Gynecologic Sonography,

Small Parts I and II Sonography, Obstetrical 1st, 2nd 3rd Trimester Sonography, Abdominal Sonography I, II, III and Vascular Technology. CLN.

Nurse Anesthesia Courses

NURA 800. Professional Aspects of Anesthesia. 3 Hours.

This course includes orientation to the profession of nurse anesthesia. The student will gain an understanding of the anesthesia department management and organization. The history of anesthesia will be discussed. Ethical, psychological, professional adjustments and legal responsibilities of the nurse anesthetist will be presented. LEC.

NURA 801. Introduction to Clinical Practicum. 1 Hour.

Students will engage in clinical practice that involves introduction to basic anesthesia skills. Emphasis is given to patient assessment, anesthetic planning and management of the patient population of low risk categories. The course includes introduction to clinical problem solving and "call" experiences that address the trauma patient and emergency surgical/anesthetic interventions for pathological states. Prerequisite: Permission of Instructor. CLN.

NURA 805. Clinical Anatomy. 4 Hours.

An intensive study of the major anatomical systems and regions of the body which have clinical significance for anesthetists and others. Particular attention devoted to the respiratory, cardiovascular, and nervous systems. Regional topics include the anatomy of the head, neck, vertebral column, thorax, axilla, and femoral triangle. Involves both lectures and cadaver dissection, plus appropriate models, x-ray films, and audiovisual materials. Prerequisite: Admission to the Nurse Anesthesia Program or permission of instructor. LEC.

NURA 806. Advanced Physiology. 4 Hours.

A course designed to lead to an advanced comprehension of the physiology of organ systems in the human in both cellular and organ processes. Physiology subject matter relevant to clinical health sciences include membrane transport, muscle, cardiovascular, respiratory, renal, water and electrolyte balance, gastrointestinal, and endocrine physiology as well as neurophysiology. Cellular mechanisms include the structure and function of ion channels and pumps, mechanisms of calcium regulation, excitation-coupling processes and mechanisms of oxidative cell damage and apoptosis. Prerequisite: Permission of instructor. LEC.

NURA 808. Health Care Policy for Advanced Nursing Practice. 2 Hours.

Students will utilize current clinical and legislative issues to examine ways to conceptualize the issues into social policy contexts. Assignments throughout the course are employed to both demonstrate and engage students in leadership and structural systems theories to effect change in healthcare policy. The course includes social policy development across the lifespan, leadership styles which influence change, and the implementation and analysis of policy solutions. Prerequisite: Successful completion of first three semesters of Doctor of Nurse Anesthesia Practice curriculum. LEC.

NURA 809. Adv Pathophysiology. 3 Hours.

A course designed to lead to advanced comprehension of pathophysiologic processes in the human body. Course content will build upon prior nursing education and professional experiences to provide a scientific basis for clinical application related to anesthetic planning and implementation. The intent of this course is to prepare the nurse anesthesia student to engage in critical thinking and problem-solving skills pertinent to the application of best practices involving anesthesia considerations for patients with pathological conditions. Prerequisite: NURA 806 Advanced Physiology. LEC.

NURA 811. Advanced Theory in Anesthesia I. 2 Hours.

This is the first of five successive courses relative to the didactic study of the art and science of nurse anesthesia. Students will acquire the knowledge base pertinent to the perioperative anesthetic management of ophthalmology and otorhinolaryngology procedures and patients with alterations in the endocrine system. Students enhance their critical thinking, problem-solving skills and ability to synthesize didactic information to the clinical environment. In addition, students will be required to engage in analysis of currently published research to identify "best practices" based on research evidence. Prerequisite: Permission of Instructor. LEC.

NURA 812. Advanced Theory in Anesthesia II. 3 Hours.

This is the second of five successive courses relative to the didactic study of the art and science of nurse anesthesia. Students will acquire the knowledge base pertinent to the perioperative anesthetic management of critical care and trauma patients, acid base and electrolytes, and hematology needs of patients during surgical interventions. Students enhance their critical thinking, problem-solving skills and ability to synthesize didactic information to the clinical environment. In addition, students will be required to engage in analysis of currently published research to identify "best practices" based on research evidence. Prerequisite: Permission of Instructor. LEC.

NURA 813. Advanced Theory in Anesthesia III. 2 Hours.

This is the third of five successive courses relative to the didactic study of the art and science of nurse anesthesia. Students will acquire the knowledge base pertinent to the perioperative anesthetic management of obstetrical, neonatal and pediatric patients. Students enhance their critical thinking, problem-solving skills and ability to synthesize didactic information to the clinical environment. In addition, students will be required to engage in analysis of currently published research to identify "best practices" based on research evidence. Prerequisite: Permission of Instructor. LEC.

NURA 814. Advanced Theory in Anesthesia IV. 3 Hours.

This is the fourth of five successive courses relative to the didactic study of the art and science of nurse anesthesia. Students will acquire the knowledge base pertinent to the perioperative anesthetic management of neurosurgical, cardiovascular, thoracic, and transplantation patients. Students enhance their critical thinking, problem-solving skills and ability to synthesize didactic information to the clinical environment. In addition, students will be required to engage in analysis of currently published research to identify "best practices" based on research evidence. Prerequisite: Permission of Instructor. LEC.

NURA 815. Advanced Theory in Anesthesia V. 3 Hours.

This is the fifth of five successive courses relative to the didactic study of the art and science of nurse anesthesia. Students will acquire the knowledge base pertinent to the perioperative anesthetic management of the orthopedic patient and disease processes of the myoneurological disease processes, the geriatric and urological patient during surgical interventions. Students enhance their critical thinking, problem-solving skills and ability to synthesize didactic information to the clinical environment. In addition, students will be required to engage in analysis of currently published research to identify "best practices" based on research evidence. Prerequisite: Permission of Instructor. LEC.

NURA 820. Information Systems and Data Management in Anesthesia. 1 Hour.

Information systems, data management concepts, and their applications will be explored. This will enable the doctoral prepared nurse anesthetists to utilize resources to facilitate quality improvement, increase patient safety through outcome measurements, and improve resource utilization in the perioperative period. Prerequisite: Permission of instructor. LEC.

NURA 821. Advanced Practicum in Anesthesia I. 2 Hours.

This is the first of six courses relative to the application of the art and science of nurse anesthesiology. Each section is designed to address specific surgical categories and the relevant patient care needs and risks. Completion of each course requires acquisition and refinement of clinical skills. Students will demonstrate progression in cognitive, psychomotor and affective skills appropriate to a professional nurse anesthetist. Prerequisite: Permission of Instructor. PRA.

NURA 822. Advanced Practicum in Anesthesia II. 2 Hours.

This is the second of six courses relative to the application of the art and science of nurse anesthesia. Each section is designed to address specific surgical categories and the relevant patient care needs and risks. Completion of each course requires acquisition and refinement of clinical skills. Students will demonstrate progression in cognitive, psychomotor and affective skills appropriate to a professional nurse anesthetist. Prerequisite: Permission of Instructor. PRA.

NURA 823. Advanced Practicum in Anesthesia III. 2 Hours.

This is the third of six courses relative to the application of the art and science of nurse anesthesia. Each section is designed to address specific surgical categories and the relevant patient care needs and risks. Completion of each course requires acquisition and refinement of clinical skills. Students will demonstrate progression in cognitive, psychomotor, and affective skills appropriate to a professional nurse anesthetist. Prerequisite: Permission of Instructor. CLN.

NURA 831. Advanced Chemistry and Physics. 2 Hours.

Chemical and physical principles including states and properties of matter, laws governing the behavior of gases, flow and vaporization, oxidation and combustion; principles of electricity and electrical safety; and chemical properties and structure-activity relationships as a foundation for pharmacology. Course will also cover pertinent areas of organic chemistry. Prerequisite: Permission of instructor. LEC.

NURA 833. Basic Principles of Anesthesia Practice. 3 Hours.

This course introduces students to the introductory principles and theories regarding the art and science of anesthesia practice. Students will develop a conceptual basis for practice gained through a systems approach applied to development of anesthesia care based upon a strong foundation in physical assessment, physiological monitoring, applications of pharmacology, anesthesia systems, physical and chemical basic sciences. Prerequisite: Admission to the nurse anesthesia program or permission of instructor. LEC.

NURA 835. Advanced Physical Assessment and Patient Care Technology for Anesthesia. 3 Hours.

This course is designed to develop and refine the physical assessment skills of the practitioner as well as enhance their understanding, interpretation, and application of laboratory measurements and advanced diagnostic procedures in the perioperative setting. The course is arranged in a systems approach with emphasis placed on the cardiovascular, pulmonary, renal, neurological, and endocrine. Diagnostic procedures and laboratory values specific to each of these systems and their relevance to anesthesia principles and practice will be discussed. The selection of appropriate monitoring devices specific to each system related to individual patient needs will be discussed. Prerequisite: Permission of instructor. LEC.

NURA 839. Regional Anesthesia/Pain Management. 3 Hours.

Includes study of conductive anesthesia techniques, pharmacokinetics of local anesthetics, anatomical placement, and physiologic response. The course is inclusive of acute and chronic pain management techniques. LEC.

NURA 880. Advanced Topics: _____. 1-4 Hours.

Special study allowing a student to pursue a particular subject through readings, directed assignments, and conferences with a faculty member. Prerequisite: Consent of instructor. LEC.

NURA 889. Introduction to Theory, Research Methods and Evidence-Based Practice. 3 Hours.

Methods of theory development and analysis provide the foundation for the study of concepts and theories from nursing, anesthesiology and related scientific disciplines. Historical, scientific and philosophical frameworks relevant to the theoretical basis of nurse anesthesia are explored. The fundamentals of research methodology are examined including elements of design, measurement, statistical analysis and dissemination. The relationships between research, theory and practice are developed to create an awareness of how "best practice" resources support professional growth, competence and quality. Prerequisite: Permission of instructor. LEC.

NURA 892. Applied Statistics and Analysis in Health Care. 3 Hours.

Concepts include graduate-level statistical reasoning, statistical principles, and the role as the scientific basis for clinical and public health research and practice. Content includes hospital-based statistics, introduction to epidemiology, relationship of research design to statistical methods, research ethics/protocol, hypothesis testing, and data management. Prerequisite: Permission of instructor. LEC.

NURA 901. Evaluation and Application of Evidence-Based Practice in Anesthesia I. 1 Hour.

First of four courses in which the student will use analytic methods to critically appraise existing literature from nurse anesthesiology and other disciplines to determine and implement the best evidence for practice. An exploration of the design, implementation and evaluation of quality improvement methodologies will lead the student to an appreciation of the safe, effective, efficient and timely delivery of patient-centered anesthesia care. Previous student knowledge in the domain of research analysis will be applied to the design of evidence-based interventions in current anesthesia practice. Prerequisite: Permission of instructor. LEC.

NURA 902. Evaluation and Application of Evidence-Based Practice in Anesthesia II. 1 Hour.

Second of four courses in which the student will use analytic methods to critically appraise existing literature from nurse anesthesiology and other disciplines to determine and implement the best evidence for practice. An exploration of the design, implementation and evaluation of quality improvement methodologies will lead the student to an appreciation of the safe, effective, efficient and timely delivery of patient-centered anesthesia care. Previous student knowledge in the domain of research analysis will be applied to the design of evidence-based interventions in current anesthesia practice. Prerequisite: Permission of instructor. LEC.

NURA 903. Evaluation and Application of Evidence-Based Practice in Anesthesia III. 1 Hour.

Third of four courses in which the student will use analytic methods to critically appraise existing literature from nurse anesthesiology and other disciplines to determine and implement the best evidence for practice. An exploration of the design, implementation and evaluation of quality improvement methodologies will lead the student to an appreciation of the safe, effective, efficient and timely delivery of patient-centered anesthesia care. Previous student knowledge in the domain of research analysis will be applied to the design of evidence-based interventions in current anesthesia practice. Prerequisite: Permission of instructor. LEC.

NURA 904. Evaluation and Application of Evidence-Based Practice in Anesthesia IV. 1 Hour.

Fourth of four courses in which the student will use analytic methods to critically appraise existing literature from nurse anesthesiology and other

disciplines to determine and implement the best evidence for practice. An exploration of the design, implementation and evaluation of quality improvement methodologies will lead the student to an appreciation of the safe, effective, efficient and timely delivery of patient-centered anesthesia care. Previous student knowledge in the domain of research analysis will be applied to the design of evidence-based interventions in current anesthesia practice. Prerequisite: Permission of instructor. LEC.

NURA 912. Leadership in Nurse Anesthesia I. 1 Hour.

First of two courses which focus the students on leadership projects which were designed in NURA 800, Professional Aspects of Anesthesia. Students will apply a variety of leadership theories as they conduct the projects with nurse anesthesia faculty supervision. At the conclusion of NURA 913, students will evaluate the projects and determine if goals were met, recognize which principles of leadership theory(ies) were utilized in the projects, and prepare an action plan for revisions. Presentations and self-analysis of the projects will be posted as VOPPTs on the ANGEL course site. Prerequisite: Permission of instructor. FLD.

NURA 913. Leadership in Nurse Anesthesia II. 1 Hour.

Second of two courses which focus the students on leadership projects which were designed in NURA 800, Professional Aspects of Anesthesia. Students will apply a variety of leadership theories as they conduct the projects with nurse anesthesia faculty supervision. At the conclusion of NURA 913, students will evaluate the projects and determine if goals were met, recognize which principles of leadership theory(ies) were utilized in the projects, and prepare an action plan for revisions. Presentations and self-analysis of the projects will be posted as VOPPTs on the ANGEL course site. Prerequisite: Permission of instructor. FLD.

NURA 924. Advanced Practicum IV. 2 Hours.

Fourth of six clinically-based courses related to the art and science of advanced nurse anesthesia practice and care of patients with specialized anesthesia care. The courses are divided into sequential clinical practicum related to diverse patient types in both normal and abnormal states and for those requiring anesthesia care in specialized areas (cardiothoracic, obstetrics, neurosurgical, etc.) Participation in case presentations may be required as warranted by clinical events. An opportunity is provided to apply advanced clinical decision making skills and evidence-based research to the assessment, management, and evaluation of complex health care problems of a diverse patient population in the perianesthesia care setting. Prerequisite: Permission of instructor. PRA.

NURA 925. Advanced Practicum V. 2 Hours.

Fifth of six clinically-based courses related to the art and science of advanced nurse anesthesia practice and care of patients with specialized anesthesia care. The courses are divided into sequential clinical practicum related to diverse patient types in both normal and abnormal states and for those requiring anesthesia care in specialized areas (cardiothoracic, obstetrics, neurosurgical, etc.) Participation in case presentations may be required as warranted by clinical events. An opportunity is provided to apply advanced clinical decision making skills and evidence-based research to the assessment, management, and evaluation of complex health care problems of a diverse patient population in the perianesthesia care setting. Prerequisite: Permission of instructor. PRA.

NURA 926. Advanced Practicum VI. 2 Hours.

Sixth of six clinically-based courses related to the art and science of advanced nurse anesthesia practice and care of patients with specialized anesthesia care. The courses are divided into sequential clinical practicum related to diverse patient types in both normal and abnormal states and for those requiring anesthesia care in specialized areas (cardiothoracic, obstetrics, neurosurgical, etc.) Participation in

case presentations may be required as warranted by clinical events. An opportunity is provided to apply advanced clinical decision making skills and evidence-based research to the assessment, management, and evaluation of complex health care problems of a diverse patient population in the perianesthesia care setting. Prerequisite: Permission of instructor. PRA.

NURA 980. DNAP Senior Scholarly Project. 1-6 Hours.

The DNAP Senior Scholarly Project is a merger of students' accumulated knowledge base, didactic and clinical, relevant to the practice of nurse anesthesia in the Doctor of Nurse Anesthesia Practice (DNAP) curriculum. The Senior Scholarly Project requires that a practice-focused problem, issue, or concern be identified and examined in depth. The project will include application of an innovation or intervention suitable to an area of focus (e.g. organizational leadership, clinical practice, education, administration, etc.) that involves the development, evaluation, and dissemination of the project findings to a targeted audience. The DNAP Senior Scholarly Project is designed in a series of phases. Each phase is to be completed during an enrolled semester. Continuous enrollment in the project is required during the final year of the DNAP course of study. During each semester of enrollment in the DNAP Senior Scholarly Project, students will participate in project committee reviews lead by the assigned Advisory Committee Chair relative to the progression and completion of the project. The DNAP Senior Scholarly Project committee and the student share joint responsibility for the facilitation, progression, and completion of the scholarly project. Prerequisite: NURA 889, NURA 892, PRVM 800. FLD.

Occupational Therapy (MS) Courses

OTMS 699. Special Projects. 1-6 Hours.

(1-6) An elective course to allow student investigation of special issues or problems relevant to applied research and/or practice, under the direction of a faculty member chosen by the student. Systematic coverage of current issues may include a research investigation or study related to pertinent sociocultural trends, practice factors, or emerging issues in service provision. Students will complete special projects such as oral presentations, written papers, or case analysis as negotiate with the faculty mentor. May be repeated for credit. Prerequisite: Enrollment as a non-degree seeking student and permission of the instructor. IND.

OTMS 701. Professional Development. 3 Hours.

With an emphasis on leadership skills and professionalism, this course will include mentoring, supervising, managing, organizing presentations, and teaching, writing, and contributing through professional organizations (interdisciplinary and occupational therapy). Students professionalism on issues of concern to administrators, staff therapists, educators, or those in private practice. Prerequisite: Permission of Instructor. LEC.

OTMS 705. Multidisciplinary Theoretical Perspectives. 3 Hours.

Students will identify and explore the key theories in occupational therapy and those more specific to their emphasis area with an emphasis on those currently influencing clinical reasoning. Students will demonstrate an understanding of contemporary theories and be able to compare and contrast key theories. Students will develop rationales for theory guided interventions. Furthermore, they will develop an impact summary in their identified area of emphasis. Prerequisite: Permission of Instructor. LEC.

OTMS 735. Practice Models for Applied Science. 3 Hours.

Issues and trends relative to advanced application of theory, assessment and intervention with emphasis on pediatrics will be presented in lecture and discussion. Special projects will emphasize the student's special interests. Although faculty directed, student presentation will be emphasized. LEC.

OTMS 799. Special Topics in Occupational Therapy. 1-6 Hours.

An elective course to allow student investigation of special issues or problems relevant to applied research and/or practice, under the direction of a faculty member chosen by the student. Systematic coverage of current issues may include a research investigation or study related to pertinent sociocultural trends, practice factors, or emerging issues in service provision. Students will complete special projects such as oral presentations, written papers, or case analyses as negotiate with the faculty mentor. May be repeated for credit. Prerequisite: Permission of instructor. IND.

OTMS 800. Research Proseminar. 1 Hour.

A proseminar conducted by the core graduate faculty in Occupational Therapy and Therapeutic Science. Twice-monthly meeting will involve student and faculty presentations of their current research, as well as provide more opportunities to obtain feedback on research proposals. May be taken more than once for a total of four credits. (Same as TS 800.) RSH.

OTMS 801. Applied Neuroscience. 3 Hours.

The course will address the major functions of the systems within the central nervous system and how they interact to produce responses to environmental demands. Sensory input, central processing, and output mechanisms will be analyzed. The student will then appraise human behavior in relation to function and dysfunction of the nervous system, both in formulating potential behavioral signs when a specific neurological site is presented, and in hypothesizing about neurological involvement when analyzing a particular individual's problems. Prerequisite: Undergraduate neuroscience course or permission of instructor. LEC.

OTMS 835. Interpreting Research for Applied Science. 3 Hours.

This on-line course examines selected research studies, analysis methods and results employed, and applies research findings to practical problems. Students will design their own research project reflecting their area of interest. RSH.

OTMS 890. Graduate Research. 1-6 Hours.

Students investigate an empirical question relevant to occupational therapy and write a literature review and a research proposal under the guidance of a faculty advisor. Pending approval of the proposal, the student will carry out initial phases of the project, including materials preparation and data collection. RSH.

OTMS 899. Thesis. 1-6 Hours.

Course requires data analyses, interpretation, and scholarly writing based on individual original research carried out under the guidance of the student's adviser. These activities, along with an oral presentation of research, must meet with approval of the student's advisory committee to complete thesis requirements. Prerequisite: OTMS 890. THE.

Occupational Therapy Courses**OCTH 101. Introduction to Occupational Therapy. 1 Hour.**

Survey of the profession of occupational therapy. Includes information on academic and professional requirements, career opportunities, general description, and history of the profession. Open to all students. LEC.

OCTH 601. Human Anatomy. 6 Hours.

In OCTH 601, the study of gross anatomy and neuroanatomy in relation to human function and behavior will introduce students to how occupational therapists use anatomical knowledge to gather information about clients. Learning opportunities include lecture and laboratory. Prerequisite: Open to students enrolled in the MOT graduate program or those with permission from the OTEd department. LEC.

OCTH 602. Orientation to the Occupational Therapy Profession. 3 Hours.

In OCTH 602, we will examine occupation, explore the underlying philosophy and history of the occupational therapy profession, and implications for current practice and future directions. We will establish expectations for professionalism and practice application of ethical and professional behaviors within the context of occupational therapy practice. Prerequisite: Open to students enrolled in the MOT graduate program or those with permission from the OTEd department. LEC.

OCTH 605. Theory and Practice in Occupational Therapy. 2 Hours.

In OCTH 605, we will present established and emerging conceptual models of occupational therapy to guide students in exploration and discussion of assessment and intervention practices. Emerging professional reasoning skills and strategies will support individuals and small groups in synthesis and integration of theoretical concepts applied to diverse practice settings. Prerequisite: Open to students enrolled in the MOT graduate program or those with permission from the OTEd department. LEC.

OCTH 622. Analysis and Adaptations of Occupations - I. 4 Hours.

In OCTH 622, we will study the role of occupations and factors influencing occupational performance using the "top-down/bottom-up" analytic approach recommended by the WHO and reinforced by the OT Practice Framework. This course will use service learning as the context for synthesizing an understanding of occupation, the occupational therapy process, and person-centered practice. Prerequisite: Open to students enrolled in the MOT graduate program or those with permission from the OTEd department. LEC.

OCTH 630. Practicum - I. 2 Hours.

In OCTH 630, we will support students to experience and demonstrate person-centered and strength-based approaches when engaging individuals in their natural context, and to use observation, interview, and documentation skills to guide OT practice with children and families. Students will explore individual leadership strengths and styles to better understand individual roles within a complex system. Students as individuals and in small groups will undertake leadership assessment, reflection and application. Prerequisite: Open to students enrolled in the MOT graduate program or those with permission from the OTEd department. LEC.

OCTH 635. Lifespan Development from an Occupational Perspective. 4 Hours.

In OCTH 635, we will examine in detail developmental theories and how they intersect with changes in occupations across the lifespan. We will promote an advanced understanding of participation in meaningful activities by practical experiences with real people in authentic settings. Students will gain an understanding and appreciation of the qualitative differences between typical and atypical occupational performance across the lifespan. Prerequisite: Open to students enrolled in the MOT graduate program or those with permission from the OTEd department. LEC.

OCTH 645. Contexts of Occupation. 2 Hours.

In OCTH 645, contextual supports and features of physical, social, and other environments will be explored as potential tools to facilitate maintaining or enhancing occupational performance irrespective of disability status. The interaction of person, context, and environment will be explored through guided discussion, reflection, and extra-mural exploratory assignments. A culminating activity inspires teams of students to assemble course elements to develop a cohesive summary project with practical application. Prerequisite: Open to students enrolled in the MOT graduate program or those with permission from the OTEd department. LEC.

OCTH 655. Neuroscience Analysis of Occupational Performance. 3 Hours.

In OCTH 655, we will build upon prior knowledge of neuroanatomy gained through OCTH 601. Principles of neuroscience will be interpreted in clinical application using a strength-based approach to advance understanding of nervous system function. The integration and function of neural systems will be considered in relation to specific challenges and capacity of the nervous system as a whole to support behavior. A practical application and problem-based perspective will be encouraged throughout the course, with students invited to consider consumer perspective and availability of potential supports. Prerequisite: Open to students enrolled in the MOT graduate program or those with permission from the OTEd department. LEC.

OCTH 662. Physical Considerations in Facilitating Occupational Performance. 4 Hours.

In OCTH 662, we will appraise the impact of select medical conditions on person factors and occupational performance in everyday life using scientific reasoning. Students will implement occupational therapy assessment and intervention strategies integrated with knowledge of injury and disease processes to facilitate an understanding of occupational performance outcomes. Particular consideration will be given to addressing complex comorbidities within the context occupational performance. Prerequisite: Open to students enrolled in the MOT graduate program or those with permission from the OTEd department. LEC.

OCTH 670. Practicum - II. 2 Hours.

In OCTH 670, we will employ the occupational therapy process, to participate in service provision to individuals through level I fieldwork experiences. We will build upon skills from OCTH 630 to advance leadership development and effective communication. This course will use both classroom and community-based practicum experiences. Prerequisite: Open to students enrolled in the MOT graduate program or those with permission from the OTEd department. LEC.

OCTH 672. Psychiatric Considerations in Facilitating Occupational Performance. 3 Hours.

In OCTH 672, we will examine in detail occupational performance as influenced by psychological conditions using evidence-based practices and principles of mental health. We will emphasize the importance of considering individuals, groups and organizations with the context of occupational performance. Prerequisite: Open to students enrolled in the MOT graduate program or those with permission from the OTEd department. LEC.

OCTH 680. Independent Study. 1-6 Hours.

An elective course to allow students to pursue areas of special interest under direction of faculty of his or her choice. Investigation of special issues relevant to an aspect of occupational therapy practice will include study of pertinent practice factors. Student will complete special projects relevant to the practice areas, such as oral presentation, written paper or case analyses. May be repeated for credit. Prerequisite: Permission of department and instructor (offered Spring, Summer and Fall). IND.

OCTH 682. Analysis and Adaptation of Occupations - II. 2 Hours.

In OCTH 682, we will support students in service learning settings to expand OCTH 622 task analysis outcomes to include the occupational therapy practice framework to further analyze and apply the occupational therapy process using person-centered practice. Prerequisite: Open to students enrolled in the MOT graduate program or those with permission from the OTEd department. LEC.

OCTH 690. Evaluation and Assessment of Occupational Performance. 2 Hours.

In OCTH 690, we will examine in detail principles of the evaluation process to analyze occupational performance across the lifespan. We will differentiate, select, interpret, and document both formal and informal measures within a person-centered and contextually relevant approach. Prerequisite: Open to students enrolled in the MOT graduate program or those with permission from the OTEd department. LEC.

OCTH 704. Planning and Intervention in Occupational Therapy. 2 Hours.

This course will use professional reasoning to analyze cases across the lifespan. We will work in small groups using a problem-based format with faculty mentors as we develop an occupational profile, occupational analysis and evidence-based intervention plans for each case. LEC.

OCTH 710. Service Management: Delivery Systems. 1 Hour.

This course will explore how service delivery systems influence pragmatic reasoning and occupational therapy practice. We will examine American and global health care systems along with occupational therapy health care delivery settings with a focus on quality, cost, and access related to service delivery. Teaching and learning experiences occur through lecture, on-line materials, class discussion and small group activities. LEC.

OCTH 715. Supervision, Team Relations, and Management Communication. 1 Hour.

This course emphasizes entry level skills related to supervision, teamwork, and communication within practice environments. LEC.

OCTH 720. Occupational Therapy Practice Models. 7 Hours.

This course will use practice models to guide evaluation and intervention in occupational therapy practice. Students will gain an understanding of historical and contemporary models, learn the evidence underlying each model and conduct assessments with a consumer from each of the contemporary models. LEC.

OCTH 725. The Research Process. 1 Hour.

This course will transition from understanding and appraising research (OCTH 783) to generating research (OCTH 790). The purpose of this course is to guide students through planning research by introducing the components of research and describing ways in which research may be conducted. The course reviews research ethics, writing research questions and hypotheses, sampling, measurement and data collection, components of quantitative and qualitative research, and information about disseminating research. LEC.

OCTH 730. Practicum III. 2 Hours.

This course will build upon practicum and level I fieldwork experiences to continue developing necessary skills for level II fieldwork experiences. We will determine the relevant variables for intervention, work collaboratively with others within each setting, analyze, and reflect upon the experience. We will analyze principles of evidence-based practice and occupation-based intervention. LEC.

OCTH 738. Special Topics in Practice. 1-3 Hours.

Focused study of theory application, professional topics and skills, and emerging practice questions. Learning experiences may be in the form of guided readings and discussion, directed projects, seminars, or community/clinical experience with focus on advanced supplemental or exploratory learning. Specific topics and formats will vary as they are generated by student interest and faculty expertise. LEC.

OCTH 750. Case-Based Clinical Reasoning. 2 Hours.

This course will apply the professional reasoning process to understand individuals' occupational performance and analyze services provided based on cases from level II fieldwork experiences. We will participate in

small group discussion using a problem-based format to conduct case analysis and develop evidence-based intervention plans. LEC.

OCTH 755. Issues and Trends Seminar. 1 Hour.

This course will analyze key professional, political, and cultural issues and trends that impact service provision and the populations served by occupational therapists. This seminar format incorporates student-driven service experiences, discussion forums, and small group work to examine issues/trends and recognize opportunities to shape the future of the occupational therapy profession. LEC.

OCTH 760. Professional Development and Leadership in Service Management. 3 Hours.

This course will discuss professional responsibilities and career development opportunities as they relate to leadership, administration, and management of occupational therapy services. We will use reflective assessments to identify professional leadership strengths and career paths. Students working in small work groups will apply management principles to develop and propose community-based health promotion programs. LEC.

OCTH 765. Family and Community Service Systems. 2 Hours.

This course will use professional reasoning to examine occupational practice within various delivery systems. We will use lecture and small group seminars to analyze systems from level II fieldwork experiences and develop a program evaluation plan based on collaborations between students and fieldwork supervisors. LEC.

OCTH 770. Level II Fieldwork, Part 1. 6 Hours.

A required full-time, three-month supervised experience in a facility meeting specified criteria. Qualified occupational therapists supervise the experience. Students will be exposed to a variety of age ranges and disabilities within different service delivery systems. Prerequisite: Satisfactory completion of required academic coursework. LEC.

OCTH 775. Level II Fieldwork, Part 2. 6 Hours.

A required full-time, three-month supervised experience in a facility meeting specified criteria. Qualified occupational therapists will supervise this experience. Students will be exposed to a variety of age ranges and disabilities within different service delivery systems. Ages, disabilities, and service provision systems for this course will differ from the student's prior fieldwork experience. Prerequisite: Satisfactory completion of required academic coursework. LEC.

OCTH 776. Population-Based Clinical Reasoning. 3 Hours.

This course will consider population-based concepts and theories to identify, prioritize and meet the health and life participation needs of populations. Within an interprofessional online learning context, students collaborate to develop community-based assessment and intervention emphasizing promotion, maintenance and restoration of health and wellness and disease prevention for specific populations. LEC.

OCTH 780. Elective Level II Fieldwork. 3-6 Hours.

An elective (optional) supervised experience in a facility meeting specific criteria. Qualified occupational therapist will supervise this experience. This fieldwork would allow students to pursue areas of special interest. Length and time commitment of experience will be commensurate with credit hours (e.g. each credit requires 80 hours of fieldwork contact at specified site). Prerequisite: Satisfactory completion of required academic coursework and OCTH 770.. LEC.

OCTH 783. Evidence-Based Practice. 2 Hours.

This course will review, appraise, and integrate various levels of evidence to inform occupational therapy practice. Students will learn where and how to find relevant evidence as well as what factors should be considered in the assessment of evidence. We will review statistics and their use in interpreting outcome data. Students will also learn to

synthesize and translate evidence into useful information for practice. LEC.

OCTH 790. Research Practicum and Professional Writing. 3 Hours.

This course will explore how the process of conducting a faculty-mentored research project becomes a platform for developing occupational therapy principles and for guiding practice, and how conveying meaning through professional writing is essential for communicating outcomes, interpretations, and instructions. Prerequisite: OCTH 725. Students from programs outside the MS in Occupational Therapy or PHD in Therapeutic Science need to contact the Occupational Therapy Department for permission to enroll. LEC.

Occupational Therapy (Doctorate) Courses

OTD 750. Clinical Reasoning and Problem Based Learning. 3 Hours.

Students will apply a clinical reasoning process to individuals with occupational performance needs. Cases will be presented from students' clinical experiences. In a problem solving format, students will evaluate models of service delivery, evaluation and intervention delivery and dissemination of information received by the individual. Students will identify and discuss alternatives given a variety of situations and environments. PREREQUISITE: Permission of Department. LEC.

OTD 770. Knowledge For Specialty Practice Area. 3 Hours.

This course is designed to support and correspond with OTD 780. Students will be matched with a faculty mentor as they develop a literature review in an area of clinical interest. This experience is designed to supplement students' ongoing clinical practice as they develop a library of pertinent empirical readings. Students will be mentored as they develop skills in analytical reading and identification of information that informs best practice. PREREQUISITE: Admission to OTD Program or Permission of Instructor. LEC.

OTD 776. Population Based Health Care. 3 Hours.

This course will coordinate with OCTH 776. The purpose of this course is to introduce concepts and theories related to providing health care to complex systems and aggregates in the community, state and nation. Emphasis is placed on the promotion, maintenance and restoration of health and wellness and the prevention of disease. Internal and external environmental components which include historical, political, social, cultural and economic factors are presented. The role of the health care provider in identifying, prioritizing and meeting the health and life participation needs of aggregates is discussed. PREREQUISITE: Permission of department. LEC LEC.

OTD 780. Practicum in Specialty Practice Area. 3 Hours.

This course is designed to support and correspond with OTD 770. Students will complete this course as they work in a clinical environment. They will meet with a faculty mentor to support the analysis and dissemination of their empirical information gathered during OTD 770. They will present their empirical literature findings to their professional colleagues via a clinical research forum. Students will be expected to create three forms of information dissemination and critically review the professional feedback they receive. PREREQUISITE: Permission of department. LAB.

OTD 783. Evidence Based Practice. 3 Hours.

This course will coordinate with OCTH 783. Students will address the parameters and criteria for evidence-based practice. They will build a library of information that facilitates their evaluation of the status, beliefs, and practice of Occupational Therapy. They will develop skill in the synthesis of empirical evidence and explore dissemination options to service recipients. Students' work will culminate in the formulation

of a decision-making paradigm for their future practice decisions.
PREREQUISITE: Permission of Department. LEC.

OTD 799. Practice and Research. 3 Hours.

This is an elective course that allows students to pursue areas of special interest under the direction of a faculty member of his or her choice. This course is designed to support students' learning as they complete their pre-doctoral studies. Investigation of special issues relevant to an aspect of occupational therapy practice will include study of pertinent practice factors. Students will complete special projects relevant to the practice areas of interest, such as an oral presentation, written paper, or case analysis. May be repeated for credit. PREREQUISITE: Permission of Department. LEC.

OTD 825. Qualitative Research Methods. 3 Hours.

This course is an introduction to qualitative research techniques. Students will have several opportunities to gain hands-on experience using fundamental qualitative research techniques to sharpen their data collection, analysis and write-up skills. The goals of this course are to better understand the role qualitative techniques play in research, identify various ethical issues, sharpen interview and observation skills, and develop foundation skills for collecting, analyzing and interpreting qualitative data. Prerequisite: Permission of Department. Lecture course. LEC.

OTD 835. Quantitative Research for Applied Science. 3 Hours.

Research relevant to therapeutic intervention comes from a variety of disciplines involving varied research designs and analysis strategies. Students in this course will examine selected research studies and gain skill in analyzing methods and results as well as in applying research findings to practical problems. Students will conduct a systematic review on a specific area of occupational therapy practice. LEC.

OTD 850. Teaching Practicum. 1-3 Hours.

The purpose of this course is to provide practical learning whereby students receive individual mentorship for the development, implementation and evaluation of a teaching experience. Students will be responsible for developing the material, instructing students, grading assignments and evaluating the teaching experience. The teaching experience is expected to include at least 12 hours of face to face instruction (or the equivalent in on-line teaching or written materials). Teaching experiences can include MOT program lectures or labs, continuing education workshops, patient education programs, or staff inservices or another experience that meets the time and competency requirements. Prerequisite: A graduate level teaching methods course such as NSG 873, NSG 874, C T 740, C T 840 PRA.

OTD 860. Theory and Practice in Occupational Therapy. 3 Hours.

This course will cover major theoretical frameworks and practice models in occupational therapy. The history of occupational therapy will be included to provide a basis for understanding the evolution of the profession as well as past and current issues and trends. Students will learn how to critically analyze theories, evaluate research evidence related to specific theories and practice models, and assess pragmatic issues in applying practice models to specific settings and populations. LEC.

OTD 865. Occupation-Based Practice. 3 Hours.

This course is designed to critically review Occupational Therapy theories, research, practice models and frameworks using the tenets of occupation based practice. Students will analyze seminal literature from occupational science and relate theory and evidence to practice. Students will review their specified area of practice to develop a proposed method of practice that incorporates empirical evidence and practice methods. Finally, students will select a mentor from their practice area to review their

proposal. Critical feedback will be incorporated into a final presentation and paper. PREREQUISITE: Permission of Department. LEC.

OTD 875. Professional Development. 3 Hours.

This course will explore professional development from an advanced practice perspective. Students will examine aspects of advanced practice such as leadership (both work and professional), management, group and system communication and change agency. They will explore these topics within their current practice settings and select an area of advanced skills to explore in more depth. Students will develop an understanding of how they can impact systems and contribute to the development of the occupational therapy profession. LEC.

OTD 880. Program Evaluation. 3 Hours.

Leadership in areas of specialty practice will require our graduates to critically evaluate their practice programs. In this course, students will explore the traditional and innovative ways to evaluate professional services and systems, and they will develop skills to conduct program evaluations. Students will examine the purpose and process of program evaluations in a variety of clinical settings. Through lecture, discussion and a project they will develop and execute a program evaluation in their area of practice. PREREQUISITE: Permission of Department. LEC.

OTD 885. Advanced Practicum. 1-3 Hours.

This practicum is designed to span 400 hours. Students will identify an area of practice through which they want to develop clinical initiatives and leadership. Selected field experiences will provide opportunities for program development, leadership, and information dissemination. Upon completion, the students will provide his or her clinical team with a program, or research based initiative, along with specified program evaluation methods. PREREQUISITE: Permission of Department and continuous enrollment until completion of competencies. LAB.

OTD 890. Capstone Project. 1-3 Hours.

The capstone project will comprise a scholarly report individualized to the scope of the project chosen. A capstone project report represents the application of knowledge as well as the search for it, and differs from a thesis such that student opinion and experience is involved. The student must negotiate capstone objectives, evaluation standards and any potential approvals prior to initiation of the project. PREREQUISITE: Permission of OTE Advisor/Mentor after completion of core, elective, and practicum coursework. Total capstone credit will equal 3 hours. Prerequisite: All core, elective, and practicum coursework. IND.

OTD 899. Special Projects. 1-3 Hours.

This is an elective course that allows students to pursue areas of special interest under the direction of a doctoral faculty member of his or her choice. This course is designed to support doctoral training. Academic options range from research based studies and/or activities to critical analysis of clinical practice methods. Students will complete special projects relevant to their designated practice area of interest. Students must negotiate learning objectives, academic projects and evaluation standards with their mentor. May be repeated for credit. PREREQUISITE: Permission of department. LEC RSH.

Physical Therapy Rehab Sci Courses

PTRS 702. Physical Therapy Documentation and Health Informatics. 1 Hour.

Emphasizes the development of effective documentation skills, including exposure to a variety of documentation formats across various practice setting and implications for proper reimbursement. Concepts of healthcare informatics are introduced including use of an electronic documentation systems and the capability of information systems to support quality care. Disablement classification models, behavioral objectives, and functional outcome concepts are applied to organize patient data and identify

treatment goals. Prerequisite: Successful completion of semester 1 of the DPT curriculum or permission of instructor. LEC.

PTRS 703. Applied Anatomy. 1 Hour.

This course introduces the learner to how physical therapists use anatomical knowledge to gather basic examination information about the patient. Learning opportunities include lecture and laboratory.

Prerequisite: Admission into the DPT program or permission of instructor. LEC.

PTRS 704. Physical Therapy Interventions I. 3 Hours.

Skills required by the physical therapist in the generalist acute care environment. A series of patient care related lectures, demonstrations, videotapes and laboratories are integrated to teach proper body mechanics, infection control and sterile technique, basic assessment, transfers, positioning, tubes, ostomies, clinic safety procedures, tilt table usage, prescribing a proper wheel chair, applying proper therapeutic range of motion exercises, and using appropriate assistive devices for gait and transfers. Prerequisite: Successful completion of semester 1 of the DPT curriculum or permission of instructor. LEC.

PTRS 705. Physical Therapy Interventions II. 4 Hours.

Students will apply the skills obtained in clinical coursework and begin clinical problem-solving using common physical therapy treatment interventions. Topics include integumentary management for wound healing interventions, therapeutic modalities with an emphasis on the healing process and electrical modalities. Learning opportunities include lecture and laboratory. Prerequisite: Successful completion of the first 2 semesters of the DPT curriculum or permission of the instructor. LEC.

PTRS 710. Advanced Topics in Human Anatomy. 6 Hours.

The student will obtain a basic understanding of human gross anatomy with specific knowledge of upper and lower extremities, head and neck, back and neural structures. At the end of this course the student will be able to apply this knowledge of anatomy to functional and clinical situations. Prerequisite: Admission into the DPT program or permission of instructor. LEC.

PTRS 711. Applied Kinesiology and Biomechanics. 4 Hours.

This course involves a study of joint structure and function, and biomechanical principles underlying human motion. Emphasis is placed on the application of kinesiological principles to clinical physical therapy situations. Learning opportunities include lecture and laboratory. Prerequisite: Successful completion of semester 1 of DPT curriculum or permission of instructor. LEC.

PTRS 712. Pathophysiology and the Physical Therapy Diagnosis. 4 Hours.

Review of integrative human physiology and pathophysiology with an emphasis upon homeostatic mechanisms and etiologies of disease. The interrelationships of function and dysfunction at the molecular, cellular and tissue level (pathology), organ and systemic level (impairment) and to the total human body (functional limitations) will be applied in each of the body systems. Discussions and applied materials will be tailored to the physical therapist with an emphasis on PT-specific diagnoses. Prerequisite: Admission into the post-professional DPT program, or consent of instructor. LEC.

PTRS 715. Applied Musculoskeletal Anatomy. 3 Hours.

The course involves a study of joint structure, joint function, and the biomechanical principles underlying human motion. All major peripheral joints and the spine will be studied. Application of functional anatomy to clinical physical therapy situations will be emphasized. Prerequisite: admission into post-professional DPT program, or consent of instructor. LEC.

PTRS 720. Integrated Clinical Experience I. 1 Hour.

This course consists of supervised experiences in a clinical setting and seminar sessions that provide preliminary opportunities for application of didactic course work. Emphasis will be placed on the development of communication and interpersonal skills in the clinical setting, as well as documentation and physical therapy skills and procedures that have been introduced in courses. Prerequisite: Successful completion of semester 1 of the DPT curriculum or permission of instructor. CLN.

PTRS 730. Integrated Clinical Experience II. 1 Hour.

This course consists of supervised experiences in a clinical setting and seminar sessions that provide preliminary opportunities for application of didactic course work. Emphasis will be placed on the development of communication and interpersonal skills in the clinical setting, as well as documentation and physical therapy skills and procedures that have been introduced in courses. Prerequisite: Successful completion of the first 2 semesters of the DPT curriculum or permission of instructor. CLN.

PTRS 740. Evidence-Based Orthopedic Rehab. 3 Hours.

Students will apply the concepts taught in PTRS 715 (Applied Musculoskeletal Anatomy) and skills obtained in their individual clinical practice. This course will include discussion related to current treatment approaches effecting peripheral and spinal joints. The course activities include review of the current evidence based scientific literature related to orthopedic conditions and interventions, web-based discussion related to individual patient case scenarios and lab activities associated with treatment techniques including mobilization/manipulation, self-mobilization and therapeutic exercise. Prerequisite: Entry into post-professional DPT program or permission of instructor. LEC.

PTRS 745. Orthopedic Physical Therapy I. 6 Hours.

Builds on the foundation from anatomy, kinesiology and biomechanics. Examination skills and treatment interventions that apply specifically to the musculoskeletal system are provided. Basic examination skills for all peripheral joints, gait analysis, and therapeutic exercise are discussed and reviewed for common orthopedic conditions. The course will integrate instruction with case-based clinical problem solving. Learning opportunities include lecture and laboratory. Prerequisite: Successful completion of the first 2 semesters of the DPT curriculum or permission of instructor. LEC.

PTRS 746. Musculoskeletal Conditions and Management. 3 Hours.

Mastery of physical therapy subjective and objective examination and treatment intervention for patients of all ages who present with a musculoskeletal problem with emphasis on amputation, prosthetics, upper and lower extremity orthoses, fracture management and connective tissue disorders. Emphasis will be placed on the most common clinical problems and physical therapy diagnoses. Learning opportunities include lecture and laboratory. Prerequisite: Successful completion of the first 2 semesters of the DPT curriculum or permission of instructor. LEC.

PTRS 750. Research in Evidence-Based Physical Therapy Practice. 3 Hours.

An introduction to research in the evidence-based physical therapy practice including the Scientific Method, library and multimedia resources, research process, measurement theory (reliability and validity), research designs, experimental design principles, research ethics, critical review and analysis of research publications, statistical concepts, and writing of a research report and/or research proposal. Throughout, emphasis is placed on clinical research pertinent to physical therapy. Prerequisite: Successful completion of the first 2 semesters of the DPT curriculum or permission of instructor. LEC.

PTRS 810. Case Studies in PT Diagnosis. 2 Hours.

This course will provide students with the applied knowledge to medically screen patients for symptoms and signs that require the expertise of other

health care professionals. Patient cases currently treated by the practicing physical therapist will be used to compare diagnostic tests and values. The course will focus on comorbidities and their implications in diagnosis and treatment. The course will be delivered via the web. Prerequisite: Admission into the post-professional DPT program, or approval by the instructor. LEC.

PTRS 815. Case Studies in Pathophysiology. 2 Hours.

Physical therapists need skills to relate human pathophysiology to its clinical presentation. The interrelationships of function and dysfunction at the molecular, cellular and tissue level (pathology), organ and systemic level (impairment) and to the total human body (functional limitations) will be applied in each of the body systems. Discussions and applied materials will be tailored to the patient population served by the therapist. Prerequisite: Admission into post-professional DPT program, or consent of instructor. LEC.

PTRS 817. Ethics in Health Care. 2 Hours.

Basic ethical concepts, principles, relevant theories and ethical decision making models applied to major contemporary health care issues and dilemmas facing health professionals. Development of skills for ethical clinical decision making is the focus. Prerequisite: Successful completion of the first 6 semesters of the DPT curriculum or permission of instructor. LEC.

PTRS 825. Exercise Physiology. 3 Hours.

This course will provide entry-level DPT students with the knowledge of the physiological functions and adaptations of the human body with exercise. Emphasis will be placed on familiarizing students with sound medical rationale and the basis for treatment considering the immediate and long-term effects of exercise. Prerequisite: Successful completion of the first 3 semesters of the DPT curriculum, or consent of the instructor. LEC.

PTRS 826. Cardiopulmonary Physical Therapy. 5 Hours.

Anatomy, physiology and pathophysiology of the cardiovascular and pulmonary systems are studied and related to clinical signs and symptoms. Students are introduced to common evaluation and treatment techniques, as well as the rationale for including physical therapy in the management of cardiopulmonary conditions. These topics are discussed in conjunction with case studies and current research. Learning opportunities include lecture and laboratory. Prerequisite: Successful completion of the first 5 semesters of the DPT curriculum or permission of instructor. LEC.

PTRS 828. Medical Imaging. 1 Hour.

An introduction to medical imaging and an overview of its role in the health care delivery system. Topics include an introduction to basic imaging equipment with an emphasis on digital acquisition and processing. Factors affecting the quality of images and limitations to the techniques are reviewed. Imaging techniques covered include: X-rays, CT scans, Nuclear medicine, ultrasound, MRI and PET. This course will also include a component covering the microscopic anatomy of cells. Prerequisite: Admission to the DPT program or permission of instructor. LEC.

PTRS 830. Integrated Clinical Experience III. 2 Hours.

This course consists of supervised experiences in a clinical setting and seminar sessions that provide intermediate opportunities for application of didactic course work. Emphasis will be placed on the development of communication and interpersonal skills in the clinical setting, as well as documentation and physical therapy skills and procedures that have been introduced in courses. Prerequisite: Successful completion of the first 4 semesters of the DPT curriculum or permission of instructor. CLN.

PTRS 833. Pediatric Physical Therapy. 3 Hours.

This course introduces fundamental concepts necessary for the entry-level physical therapist to examine, evaluate, and treat the pediatric client. Lecture and lab experiences emphasize a problem oriented approach to physical therapy management of children with musculoskeletal, neurological, and/or cardiopulmonary impairments. Students will learn to recognize components of normal and abnormal development, particularly during the first year of life. Prerequisite: Successful completion of the first 5 semesters of the DPT curriculum or permission of instructor. LEC.

PTRS 835. Rehabilitation Administration I. 3 Hours.

The first course of two three-credit hour management classes designed to review the American health care system as a whole, and to examine the specific areas that rehabilitation health care managers must understand in order to succeed in an increasingly competitive and financially driven system. Some of these areas include the system of health care delivery, legal issues, human resource principles, accounting, reimbursement, payors, Medicare/Medicaid, regulations, outcomes information management, etc. This course will apply all of the above items to real world examples in numerous health care settings so the student understands the complexities of many settings which physical therapy personnel may work. Each unit will build on the last so that at the end of the second management course the student will be capable of proposing, building, opening, and successfully running rehabilitation services in a multitude of settings. Prerequisite: Admission into the post-professional DPT program, or consent of instructor. LEC.

PTRS 836. Rehabilitation Administration II. 3 Hours.

The second course of two three-credit hour management classes designed to review the American health care system as a whole and to examine the specific areas that rehabilitation health care managers must understand in order to succeed in an increasingly competitive and financially driven system. Some of these areas include the system of health care delivery, legal issues, human resource principles accounting, reimbursement, payors, Medicare/Medicaid, regulations, outcomes information management, etc. This course focuses on reimbursement, legal and regulation issues and will apply presented principles to real world examples in numerous health care settings so the student understands the complexities of many settings in which physical therapy personnel may work. Each unit will build on the last so that at the end of the second management course the student will have the tools to propose, build, open and successfully run rehabilitation services in a multitude of settings. Prerequisite: Admission into the post-professional DPT program, or consent of instructor. LEC.

PTRS 838. Research Concepts in Evidence-Based Physical Therapy Practice. 3 Hours.

An applied research course with emphasis on evidence-based physical therapy practice including library and multimedia resources, research process, measurement theory (reliability and validity), research designs, experimental design principles, research ethics, critical review and analysis of research publications, writing of a research report and/or research proposal, and statistical concepts and data analysis. Throughout, emphasis is placed on clinical research pertinent to physical therapy. Prerequisite: Admission into the post-professional DPT program, or consent of instructor. LEC.

PTRS 839. Advanced Topics in Pediatric Practice. 2 Hours.

This web-based course will involve study of current clinical decision-making frameworks, service delivery models, and treatment approaches for children age birth through 21 with or at risk for developmental delay and/or disability. Course activities will include review of current scientific literature and online discussion of individual patient case scenarios. Prerequisite: For the DPT program: successful completion of PTRS 833 or

consent of instructor. For the post-professional DPT program: admission into the program or consent of instructor. LEC.

PTRS 840. Integrated Clinical Experience IV. 2 Hours.

This course consists of supervised experiences in a clinical setting and seminar sessions that provide intermediate opportunities for application of didactic course work. Emphasis will be placed on the development of communication and interpersonal skills in the clinical setting, as well as documentation and physical therapy skills and procedures that have been introduced in courses. Prerequisite: Successful completion of the first 5 semesters of the DPT curriculum or permission of instructor. CLN.

PTRS 845. Orthopedic Physical Therapy II. 6 Hours.

Incorporates concepts from anatomy, kinesiology, basic biomechanics and knowledge of peripheral joint examination and treatment. Terminology, examination, evaluation, development of a treatment plan and treatment techniques and basic differential diagnosis skills for the spine and the temporomandibular joint (TMJ) are taught. Learning opportunities include lecture and laboratory. Prerequisite: Successful completion of the first 4 semesters of the DPT curriculum or permission of instructor. LEC.

PTRS 846. Orthopedic Physical Therapy III. 3 Hours.

Incorporates concepts from anatomy, kinesiology, biomechanics, and Orthopedic Physical Therapy I and Orthopedic Physical Therapy II courses. Terminology, examination, evaluation, development of a treatment plan and treatment techniques and advanced differential diagnosis skills for complex peripheral and/or spinal disorders are taught. Learning opportunities include lecture and laboratory. Prerequisite: Successful completion of the first 6 semesters of the DPT curriculum or permission of instructor. LEC.

PTRS 852. Neurologic Physical Therapy and Rehabilitation I. 6 Hours.

This course will introduce the principles of neuroscience and describe their application as relevant to physical therapists. The course will introduce the terminology of the nervous system and cover the major functions of the nervous systems. This course will also integrate neurophysiology and neuroanatomy into the clinical presentation of adults with neurologic pathology. The etiology, epidemiology signs, and symptoms of selected neurological conditions will be presented. The medical management of patients with nervous system disorders will be presented in relationship to the practice of physical therapy. The course will introduce examination of impairments for persons with neuromuscular pathologies. Students will be presented with simple case studies and progress to more complex patient problems. Learning opportunities include lecture and laboratory. Prerequisite: Successful completion of the first 4 semesters of the DPT curriculum or permission of instructor. LEC.

PTRS 853. Neurologic Physical Therapy and Rehabilitation II. 6 Hours.

This course will focus on rehabilitation approaches for people with neurologic pathology. Students will examine factors that contribute to the control of voluntary movement and the learning of motor skills, and develop an understanding of the relationship between the brain and the purposeful movements that make us human. Students will acquire the skills to hypothesize about the relationship of health conditions and body function/structure to limitations in activities and participation in adults with neurologic pathology. A clinical decision making approach will combine contemporary rehabilitation approaches, consideration of psychosocial and cognitive factors, and research evidence in the discussion of complex patient cases. After completing this course, students will demonstrate novice-level knowledge and skills necessary to complete a physical therapy examination and develop a comprehensive treatment plan for adults with neurologic pathology. Learning opportunities include

lecture and laboratory. Prerequisite: Successful completion of the first 5 semesters of the DPT curriculum or permission of the instructor. LEC.

PTRS 855. Pharmacology for Physical Therapists. 2 Hours.

Pharmacological background for the clinical treatment of patients referred to physical therapy. Fundamentals of the actions of drugs including mechanisms of therapeutic and adverse effects. Prerequisite: Successful completion of semester 1 of the DPT curriculum or permission of instructor. LEC.

PTRS 858. Evidence-Based Rehabilitation of Patients Post-CVA. 3 Hours.

This course will provide students with the applied knowledge to medically screen patients for symptoms and signs that require the expertise of other health care professionals. Patient cases currently treated by the practicing physical therapist will be used to compare diagnostic tests and values. The course will focus on comorbidities and their implications in diagnosis and treatment. The course will be delivered through the web. Prerequisite: Admission into the post-professional DPT program, or approval of the instructor. LEC.

PTRS 860. Evidence-Based Research Practicum I. 1 Hour.

Supervised and directed experiences in conducting evidence-based research activities. The research activities involved in this course are broadly defined with emphasis on the enhancement of evidence-based physical therapy practice. The student will be supervised by a member of the faculty. This is a two-semester course. Prerequisite: Successful completion of the first 5 semesters of the DPT curriculum or permission of instructor. RSH.

PTRS 861. Evidence-Based Research Practicum II. 1 Hour.

Supervised and directed experiences in conducting evidence-based research activities. The research activities involved in this course are broadly defined with emphasis on the presentation and communication of an evidence-based research project. The student will be supervised by a member of the faculty. Prerequisite: Successful completion of the first 6 semesters of the DPT curriculum, or consent of instructor. RSH.

PTRS 865. Independent Study. 1-3 Hours.

Individually negotiated learning experiences appropriate to the interests and background of the student. Prerequisite: Admission to the DPT program, post-professional DPT program, or permission of instructor. IND.

PTRS 877. Administration in Physical Therapy. 2 Hours.

Designed to familiarize the entry-level therapist with contemporary issues in health care which impact the practice of physical therapy in the health care system. Changes in the US health care system will be discussed, including managed care, plus essential elements and principles of management in health care organizations, and an overview of human resources and operational management. Financial management specifically reimbursement for patient services, risk management, information management, and compliance will be discussed. Discussion of professional development is intertwined throughout the course. Students will be exposed to business development and entrepreneurial skills needed to expand or start up a physical therapy practice. Prerequisite: Successful completion of the first 3 semesters of the DPT curriculum or permission of instructor. LEC.

PTRS 880. Differential Diagnosis of General Medical Conditions. 3 Hours.

Designed to provide students with the knowledge and clinical tools to medically screen patients for the presence of symptoms and signs that require the expertise of other health care professionals. It will focus on diagnoses that are not covered by common PT practice including diseases of the endocrine system, the immune system, GI system, and

neoplasias. Prerequisite: Admission into the post-professional DPT program, or consent of instructor. LEC.

PTRS 882. Pathophysiology and Physical Therapist Screens. 6 Hours.

Review of integrative human pathophysiology with an emphasis upon homeostatic mechanisms and etiologies of disease. The interrelationships of function and dysfunction at the molecular, cellular and tissue level (pathology), organ and systemic level (impairment) and to the total human body (functional limitations) will be applied in each of the body systems. Discussions and applied materials will be tailored to the physical therapist with an emphasis on clinical tools to medically screen patients for the presence of symptoms and signs. Prerequisite: Successful completion of semester 1 of the DPT curriculum or permission of instructor. LEC.

PTRS 890. Specialties in Physical Therapy Practice. 2 Hours.

Requires students to apply the five elements of patient/client management for addressing multi-system impairments across diverse and complex patient populations. Exposure to physical therapy advanced practice specialty areas included, but not limited to, sport medicine, women's health, neurology, pediatrics, geriatrics, and oncology. Seminar format instruction incorporating case-based instruction, group discussion, and speakers with advanced clinical credentials. Prerequisite: Successful completion of the first 6 semesters of the DPT curriculum or permission of instructor. LEC.

PTRS 920. Clinical Internship I. 6-8 Hours.

Nine to twelve weeks of clinical internship. During the clinical internship, the student will have the opportunity to develop the patient care skills needed for successful practice as a physical therapist. The student will work under the supervision of an experienced physical therapist in clinical settings affiliated with the program. Prerequisite: Successful completion of the first 7 semesters of the DPT curriculum or permission of instructor. CLN.

PTRS 921. Clinical Internship II. 6-8 Hours.

Nine to twelve weeks of clinical internship. During the clinical internship, the student will have the opportunity to develop the patient care skills needed for successful practice as a physical therapist. The student will work under the supervision of an experienced physical therapist in clinical settings affiliated with the program. Prerequisite: Successful completion of the first 7 semesters of the DPT curriculum or permission of instructor. CLN.

PTRS 922. Clinical Internship III. 6-8 Hours.

Nine to twelve weeks of clinical internship. During the clinical internship, the student will have the opportunity to develop the patient care skills needed for successful practice as a physical therapist. The student will work under the supervision of an experienced physical therapist in clinical settings affiliated with the program. Prerequisite: Successful completion of the first 7 semesters of the DPT curriculum or permission of instructor. CLN.

PTRS 923. Clinical Internship IV. 2-6 Hours.

Three to nine weeks of clinical internship. During the clinical internship the student will have the opportunity to develop the patient care skills needed for successful practice as a physical therapist. The student will work under the supervision of an experienced physical therapist in clinical settings affiliated with the program. Prerequisite: Successful completion of the first 7 semesters of the DPT curriculum or permission of instructor. CLN.

PTRS 924. Specialized Internship. 2-6 Hours.

Three to nine weeks of clinical internship. During the clinical internship the student will have the opportunity to have exposure to a different health care system such as an international clinical experience, or a specialized area of physical therapy practice. The student will be under

the supervision of an experienced physical therapist in clinical settings affiliated with the program. Prerequisite: Successful completion of the first 7 semesters of the DPT curriculum or permission of instructor. CLN.

Physical Therapy Rehab Sci Courses

REHS 760. Introduction to Matlab Programming. 1 Hour.

Introduction: matlab windows, input-output, file types, general commands; interactive computation; matrices and vectors, matrix and array operations, scripts and functions applications, graphics. Prerequisite: None LEC.

REHS 803. Research Observations. 1 Hour.

Students will be introduced to different types of research projects conducted in the department. Students will rotate in up to three research laboratories, sequentially, during a semester. The course is designed to help students select a faculty researcher to mentor them in their dissertation research. Prerequisite: Entry into the PhD in Rehabilitation Science program. LAB.

REHS 805. Seminar in Rehabilitation Science. 1 Hour.

Students will become familiar with the organization of an experimental scientific paper and learn how to critically assess papers in the field of rehabilitation science. Students will develop writing skills by summarizing scientific papers and communication skills by orally presenting and discussing research literature with his/her peers and colleagues, course coordinator and other faculty members. Prerequisite: Entry in the PhD program in Rehabilitation Science or permission of instructor. SEM.

REHS 856. Research Design and Methods I. 2 Hours.

An introduction to research design and methods including library and multimedia resources; research process; measurement theory (reliability and validity); experimental design principles; single subject design and other non-experimental design; critical thinking skill and procedure; critical review and analysis of a research article; basic scientific writing skills; and skills in writing a research report/manuscript. Prerequisite: Entry into the PhD in Rehabilitation Science program or permission of instructor. LEC.

REHS 857. Research Design and Methods II. 2 Hours.

An introduction to research design and method including critically appraising the state of art on a research topic; conducting a systematic review of literature; basic concept of statistical analysis, performing and interpreting data analysis using parametric, non-parametric, or correlational analyses; preparation of a research proposal focusing on study rational, novelty, and research questions and hypotheses; ethical issues related to research; basic knowledge of bioinformatics; meta-analysis; and writing of a research proposal. Prerequisite: Entry into the PhD in Rehabilitation Science program or permission of instructor. LEC.

REHS 862. Cellular and Molecular Basis of Rehabilitation. 2 Hours.

A study of the biology, at the cellular and molecular levels, of pathological processes that impair human function will highlight the mechanisms by which cells/tissues repair and/or adapt following disease/injury or aging. Emphasis will be placed on the body's endogenous ability for rehabilitation or adaptation to disease/injury. Prerequisite: Entry into the PhD in Rehabilitation Science program or permission of instructor. LEC.

REHS 864. Introduction to Rehabilitation Science. 3 Hours.

This course provides introduction to and overview of rehabilitation science, an interdisciplinary field of study that focuses on restoring functional capacity in a person and improving their interactions with the surrounding environment. Different areas of rehabilitation science will be presented. Features of the pathological conditions and targeted individuals, factors that contribute to the outcomes of the rehabilitation, research tools and measurements, potential optimal rehabilitation techniques, and directions of future research will be discussed.

Prerequisite: Entry into the PhD in Rehabilitation Science program or permission of instructor. LEC.

REHS 865. Independent Study. 1-3 Hours.

Individually negotiated learning experiences appropriate to the interests and background of the student. Prerequisite: Entry in the PhD in Rehabilitation Science program, or permission of instructor. IND IND.

REHS 866. Developing Research Aims in Rehabilitation Science. 2 Hours.

Students will practice writing specific aims, hypothesis and general study design of a research proposal. Prerequisite: Entry into the PhD in Rehabilitation Science program or permission of instructor. LEC.

REHS 870. Teaching Practicum. 1-3 Hours.

Directed experiences in a planned instructional activity. Student will write course objectives, plan and deliver lectures, produce practical and written exams and assign grades. Prerequisite: Entry in the PhD in Rehabilitation Science program or consent of instructor. LEC.

REHS 873. Research Practicum. 1-3 Hours.

This course is designed to provide supervised research experience in various laboratories in the department. Prerequisite: Entry in the PhD in Rehabilitation Science program, or consent of instructor. RSH.

REHS 875. Clinical Practicum. 1-3 Hours.

Specialized clinical training in a highly specific area of specialization. The primary purpose of this course is for the student to develop advanced clinical skills in his/her area of specialization. Prerequisite: Admission to the PhD in Rehabilitation Science program, and permission of instructor. CLN.

REHS 884. Motor Control and Learning. 3 Hours.

The course will explore the study of the conditions and factors that influence the acquisition, control, and performance of motor skills. Prerequisite: Entry into the PhD in Rehabilitation Science program or permission of instructor. LEC.

REHS 886. Musculoskeletal Rehabilitation. 3 Hours.

This course will explore the current concepts in musculoskeletal rehabilitation. The healing process of different types of tissue will be reviewed. The pathophysiological mechanisms of pain and acute and chronic injuries will be studied. Examination, evaluation and treatment interventions for the principal musculoskeletal conditions will be reviewed and discussed. Current scientific literature will be investigated and group discussions will be directed to scientific evidence for the variety of rehabilitation practices in musculoskeletal conditions. Prerequisite: Entry into the PhD in Rehabilitation Science program or permission of instructor; REHS 884 Motor Control and Learning or an equivalent. LEC.

REHS 887. Neurorehabilitation. 3 Hours.

This course will provide an overview of the evidence of neurorehabilitation interventions on all domains of the International Classification of Functioning in various neurological conditions. Following a review of neuroanatomy, neurophysiology, and clinical presentation of common neurological conditions, principles of neuroplasticity and functional re-organization in neurorehabilitation will be outlined. Evidence of traditional concepts and emerging therapies in neurorehabilitation will be presented. Prerequisite: Entry into the PhD in Rehabilitation Science program or permission of instructor; REHS 884 Motor Control and Learning or an equivalent. LEC.

REHS 889. Grant Writing. 3 Hours.

Research proposal writing for PhD comprehensive examinations and grant applications to federal and private funding agencies including all elements of the grant proposal - aims, innovation, significance and design. The process of grant proposal submission, review and resubmission

is covered. Prerequisite: Current enrollment in a recognized graduate degree program. LEC.

REHS 970. Instrumented Analysis of Human Biomechanical Function. 3 Hours.

An in-depth study that provides critical analysis of equipment and other resources used in analyzing human motion, balance, strength, electrophysiological responses, and cardiorespiratory function. Students will be required to conduct a preliminary study, including design, methodology and data collection using one or more of these instruments. Prerequisite: Entry in the PhD in Rehabilitation Science program, or consent of instructor. LEC.

REHS 980. Graduate Research. 1-10 Hours.

Original laboratory investigation conducted under the supervision of a senior staff member. Prerequisite: Entry in the PhD in Rehabilitation Science program, or consent of instructor. RSH.

REHS 990. Dissertation in Rehabilitation Science. 1-10 Hours.

For students in advanced standing enrolled in the PhD in Rehabilitation Science program. THE.

Respiratory Care Courses

RESP 300. Introduction to Respiratory Care Procedures. 4 Hours.

An introductory course designed to acquaint the student with the fundamental theory, procedures, and equipment used in respiratory therapy. Emphasis is placed on understanding application of equipment and procedures to the patient, and the respiratory therapy treatment of patients requiring non-continuous ventilatory assistance. This course introduces such topics as cardiopulmonary resuscitation, bronchopulmonary hygiene, airway care, oxygen therapy, and cleaning and sterilization of equipment. Prerequisite: Enrollment in the Respiratory Care Program. LEC.

RESP 301. Respiratory Care Evidence Based Practice 1. 2 Hours.

This course is designed to provide the participant with a basic introduction to healthcare research with emphasis on evidence based practices. Students will learn how to identify a research question and conduct a proper literature search. This course will teach students the strengths and weaknesses of different search sources, how to review and critique a scientific article, and present the results of their literature review. Students will learn how to properly cite and develop a bibliography that is consistent with scientific writing, as well as, develop an introduction section of a research paper. This course will familiarize the students with cardiorespiratory medical terminology. Prerequisite: Enrollment in the Respiratory Care Program. LEC.

RESP 302. Respiratory Care Evidence Based Practice 2. 2 Hours.

This course is the continuation of Respiratory Care Evidence Based Practice 1 and designed to reinforce the principles of healthcare research, evidence based practices, and the medical terminology used in the cardiorespiratory sciences. Students will refine their ability to identify a research question, conduct a literature search, review and critique a scientific article, and present the results of their literature review. This course will continue to emphasize proper citation and bibliography documentation consistent with scientific writing. Prerequisite: RESP 301 and Enrollment in the Respiratory Care Education Program. LEC.

RESP 305. Cardiopulmonary Pathophysiology. 4 Hours.

This course will introduce the student to normal anatomy and physiology of the cardiopulmonary systems, as well as, cardiopulmonary pathology. Students will focus on the etiology, pathophysiology, and treatment of pulmonary and cardiac diseases, with emphasis on the pulmonary system. LEC.

RESP 310. Clinical Pharmacology. 2 Hours.

The student will learn about adrenergic and parasympatholytic bronchodilators, corticosteroids, mucus-controlling drugs, surfactant agents, antitussives, and the anti-infective drugs used for the treatment of respiratory disorder. Prerequisite: Enrollment in the Respiratory Care Program. LEC.

RESP 315. Clinical Application 1. 3 Hours.

This course introduces the beginning respiratory therapy student to the clinical environment. The student participates in clinically-oriented workshops, observation rotations, learning laboratory sessions, or simulations that focus on the application of respiratory therapy equipment, theory, patient management, and communication in the clinical setting. Prerequisite: Enrollment in the Respiratory Care Program. FLD.

RESP 320. Pulmonary Pathology. 3 Hours.

A course consisting of lecture and group discussion designed to introduce the student to pulmonary pathology. Special emphasis is placed on the etiology, pathophysiology, and treatment of pulmonary diseases. This course includes such topics as signs and symptoms of lung disease, chronic obstructive pulmonary diseases, pleural and mycotic diseases. Prerequisite: Enrollment in the Respiratory Care Program. LEC.

RESP 325. Mechanical Ventilators. 4 Hours.

This course contains such topics as arterial puncture, classification of mechanical ventilators and adjunct devices, and their application to the patient. Four hours of lecture/discussion and a 3 hour weekly laboratory acquainting the student with the rationale for continuous mechanical ventilation and the basic operation of adult, pediatric and neonatal mechanical ventilators. Emphasis is placed on the selection of appropriate equipment and assessment of its effect on the patient. Prerequisite: Enrollment in the Respiratory Care Program. LEC.

RESP 330. Pulmonary Function. 2 Hours.

Lecture and laboratory introducing the student to basic pulmonary function procedures. This course allows the student to practice pulmonary function tests and interpret the results. Lecture and laboratory topics include such topics as the measurement of lung volumes and capacities, body plethysmography, blood gas analysis, and flow volume loops. Prerequisite: Enrollment in the Respiratory Care Program. LEC.

RESP 335. Clinical Application 2. 4 Hours.

This course provides the respiratory therapy student with an introduction to the critical care setting. The student will begin to apply the procedures and equipment most often utilized in the intensive care areas. Emphasis is placed on continuous mechanical ventilation, artificial airways, airway care, and bedside pulmonary function testing. The student will assume limited patient care responsibility in the critical care areas. Prerequisite: RESP 315. FLD.

RESP 340. Introduction to Pediatrics. 1 Hour.

Study of common pediatric disorders for the beginning respiratory care student. Course focuses on assessment and respiratory management of the pediatric patient, including diseases such as asthma, epiglottitis, croup, and foreign body. Prerequisite: Enrollment in the Respiratory Care Program. LEC.

RESP 345. Clinical Application 3. 3 Hours.

This course is a continuation of the clinical sequence that provides the respiratory therapy student with experience in the critical care setting. The student applies the procedures and equipment utilized by respiratory care practitioners in the intensive care areas. Emphasis is placed on continuous mechanical ventilation, artificial airways, airway care, and bedside diagnosis. The student assumes progressively more patient care responsibility in the critical care areas under preceptor supervision. Prerequisite: Completion of RESP 335. FLD.

RESP 350. Clinical Application (special). 1 Hour.

This course provides the intermediate respiratory therapy student with opportunities to practice basic respiratory therapy procedures. Emphasis placed on performance of respiratory therapy procedures and application of equipment. This course emphasizes such topics as oxygen therapy, aerosol therapy, incentive spirometry, patient assessment, and IPPB therapy. The student will assume limited patient care responsibilities. FLD.

RESP 375. Clinical Special. 0 Hours.

This course provides the advanced respiratory therapy student with opportunities to refine procedural and evaluative skills in the critical care areas. The student will spend a minimum of twenty-four hours per week in the clinical setting. Emphasis is placed upon the students ability to evaluate the patients' clinical situation and recommend appropriate therapy modalities to the clinical supervisor. During this course the student will assume wider-ranging patient care responsibilities. FLD.

RESP 399. Generalist Practice. 1 Hour.

This course is designed to allow students the opportunity to improve and perfect skills acquired in the junior year clinical courses. Emphasis will be given to refining the students' abilities to assess patient status and administer appropriate therapy modalities. This course may also be used to assess respiratory therapy knowledge and skills of students transferring from other programs. Prerequisite: Permission of instructor. FLD.

RESP 400. Chronic Respiratory Disease Management: The Evolving Role of the Respiratory Therapist. 3 Hours.

This course is an introduction to the evolving role of respiratory therapists in health care, especially in the area of chronic disease management. The students will explore various trends that are contributing to the role respiratory therapy may play in patient care. Topics covered in this course include COPD and asthma management, pulmonary rehabilitation, cardiopulmonary exercise testing, home care, elderly care, nutritional care of the pulmonary patient, and communication skills necessary for patient education. Students in this course will gain an understanding of how they can contribute to an inter-professional team in order to provide safe and effective patient care. Presentation of topics in this course may include lecture, group work/discussion, audiovisual, computer and other multimedia aids. Prerequisite: Enrollment in the Respiratory Care Program. LEC.

RESP 405. Advanced Critical Care. 4 Hours.

Concepts of the diseases and disorders that effect the critically ill adult are explored. Emphasis is placed on understanding common illnesses such as cardiac dysrhythmias, acute coronary syndrome, trauma of the chest and head, organ failure and toxin exposure as well as the other medical challenges of the critically ill patient. Prerequisite: Enrollment in the Respiratory Care Program. LEC.

RESP 410. Neonatal Respiratory Care. 4 Hours.

This course is designed to provide the student with an introductory knowledge of fetal and newborn cardiorespiratory anatomy, physiology, development, pathophysiology, and care. Prerequisite: Senior year standing or permission of instructor. LEC.

RESP 415. Clinical Application 4. 4 Hours.

This course provides the advanced respiratory therapy student with opportunities to refine procedural and evaluative skills in the critical care areas. In the clinical setting emphasis is placed upon the student's ability to evaluate the patient's clinical situation and recommend appropriate therapy modalities to the clinical instructor. During this course the student will assume a progressively wider range of patient care responsibilities. Prerequisite: Enrollment in the Respiratory Care Program. FLD.

RESP 420. Health Care Management, Ethics and Law. 2 Hours.

This course provides an overview of fundamental concepts in healthcare management, law, and ethics. Students will learn the skills and knowledge necessary to be successful in management leadership, management design, and managing diversity. Ethical concerns relevant to the healthcare manager will be addressed. Current and historical controversies in healthcare will be discussed. Upon completion of this course, students will have the knowledge to understand laws, ethics, and management principles of the complex healthcare landscape. LEC.

RESP 450. Chronic Respiratory Disease Management: The Evolving Role of the Respiratory Therapist. 3 Hours.

This course is open only to online students. This course is an introduction to the evolving role of respiratory therapists in health care, especially in the area of chronic disease management. The students will explore various trends that are contributing to the role respiratory therapy may play in patient care. Topics covered in this course include COPD and asthma management, pulmonary rehabilitation, cardiopulmonary exercise testing, home care, elderly care, nutritional care of the pulmonary patient, and communication skills necessary for patient education. Students in this course will gain an understanding of how they can contribute to an inter-professional team in order to provide safe and effective patient care. Presentation of topics in this course may include lecture, group work/discussion, audiovisual, computer and other multimedia aids. LEC.

RESP 455. Physical Science. 3 Hours.

This course is open only to online students. Introduces the physical science principles that govern the movement and behavior of gases, particles, and equipment utilized in the practice of the respiratory care. Prerequisite: Enrollment in the Respiratory Care Program. LEC.

RESP 460. Advanced Critical Care. 3 Hours.

This course is open only to online students. Concepts of the diseases and disorders that effect the critically ill adult are explored. Emphasis is placed on understanding common illnesses such as cardiac dysrhythmias, acute coronary syndrome, trauma of the chest and head, organ failure and toxin exposure as well as the other medical challenges of the critically ill patient. LEC.

RESP 465. Neonatal Respiratory Care. 3 Hours.

This course is open only to online students. This course is designed to provide the student with knowledge of fetal and newborn cardiorespiratory anatomy, physiology, development, pathophysiology, and care. LEC.

RESP 470. Cardiopulmonary Diagnostics. 3 Hours.

This course is open only to online students. This course covers the theory, indications, equipment, interpretation, and application of the various diagnostic procedures used in the clinical management of the cardiopulmonary patient. Prerequisite: Permission of the instructor. LEC.

RESP 490. Special Studies or Projects. 1-9 Hours.

This course involves individual study, research or projects in the field of respiratory care under instructor guidance. Written reports and periodic conferences are required. Content and unit credit will be determined by student-instructor conferences and/or departmental conferences. This course may be repeated for a maximum of nine credits. Prerequisite: Admission to the respiratory care program and consent of instructor. LEC.

RESP 495. Management, Ethics, and Law in Respiratory Care. 3 Hours.

This course is only open to online students. This course provides an overview of fundamental concepts in healthcare management, law, and ethics. Students will learn the skills and knowledge necessary to be successful in management leadership, management design, and managing diversity. Ethical concerns relevant to the healthcare manager will be addressed. Current and historical controversies in healthcare will

be discussed. Upon completion of this course, students will have the knowledge to understand laws, ethics, and management principles of the complex healthcare landscape. LEC.

RESP 601. Scientific Investigation Part I. 1 Hour.

This course is designed to provide the participant with an introduction to research skills culminating in a group Proposal of a bench study or chart review. The Proposal will consist of three sections: Introduction, Review of the Literature and Methods. The three sections will be developed through a series of progress reports with the aid of a faculty advisor. Students will work in groups to develop a research question about their daily practice that can only be answered by conducting research. This course will include discussions of the types of research data and the structure of a research manuscript. Students will have opportunities to read, interpret and analyze research reports and practice in writing critical evaluations of the literature as it applies to their research question. Prerequisite: Statistics LEC.

RESP 605. Scientific Investigation Part II. 1 Hour.

This course is designed to teach the student how to read, interpret and analyze research reports. Prerequisite: Enrollment in the Respiratory Care Program. LEC.

RESP 610. Scientific Investigation Part III. 1 Hour.

Each study group will write the Discussion and Conclusion sections of their paper and share their findings in a poster presentation. The final version of each group's study manuscript must be submitted to course instructor prior to graduation. The quality of the manuscript will be appropriate for submission to the journal of Respiratory Care. Prerequisite: Enrollment in the Respiratory Care Program. LEC.

RESP 615. Registry Review. 2 Hours.

This course involves individual student under instructor guidance. A series of practice exams are taken and discussed including a secured practice registry exam and clinical simulation exam. Prerequisite: Enrollment in the Respiratory Care Program. LEC.

RESP 620. Respiratory Capstone. 2 Hours.

Provides the student with a capstone course integrating activities and responsibilities related to clinical processes in one of the specific advanced practice specialties: critical care, neonatal, pediatrics, pulmonary rehabilitation, pulmonary function, sleep, hyperbaric oxygen, management or education. Prerequisite: Enrollment in the Respiratory Care Program. LEC.

RESP 625. Clinical Specialty Practicum. 5 Hours.

Integrated with RESP 620 Respiratory Capstone, this course provides the student with the opportunity to integrate clinical activities and responsibilities related to one of the specific advanced practice specialties: critical care, neonatal, pediatrics, pulmonary rehabilitation, pulmonary function, sleep, hyperbaric oxygen, management, or education. Prerequisites: Co-requisite RESP 620. FLD.

RESP 650. Research in Health Care. 3 Hours.

This course is open only to online students. This course combines the on-campus series of courses: RESP 600, 605, and 610, for the individual student. The first half of the semester will produce a study proposal for a chart review that will require a faculty-assisted search of our database of de-identified patient information. The second half of semester will be analyzing results of search and with the aid of a faculty advisor, writing a quality manuscript suitable for submission to Respiratory Care that will be submitted to course instructor, at the very least. Prerequisite: Statistics. LEC.

RESP 655. Leadership Management. 3 Hours.

This course is open only to online students. An introduction to basic principles of management and their application in the current health care

environment. Course content includes management theory, scope of management, quality issues, budgeting, personnel issues, evaluation and application of management concepts. Prerequisite: Senior year standing or permission of the instructor. LEC.

RESP 665. Clinical Specialty Project. 6 Hours.

This course is open to online students only. Designed to give the student the opportunity to develop a clinically-related project in the areas of quality improvement, health care organizational structures and current processes in patient management. This course is intended to serve as a capstone experience for the online student integrating communication skills and clinical knowledge. Prerequisite: Enrollment in the Respiratory Care Program. LEC.

Therapeutic Science Courses

TS 800. Research Proseminar. 1 Hour.

A proseminar conducted by the core graduate faculty in Occupational Therapy and Therapeutic Science. Twice-monthly meetings will involve student and faculty presentations of their current research, as well as provide more opportunities to obtain feedback on research proposals. May be taken more than once for a total of four credits. (Same as OTMS 800.) LEC.

TS 805. Multidisciplinary Theoretical Perspectives. 3 Hours.

Students will identify and explore key theories in behavioral and social science with an emphasis on those currently influencing clinical reasoning. Students will demonstrate an understanding of contemporary theories and be able to compare and contrast key theories, while also developing knowledge about theory guided research and interventions. LEC.

TS 850. From Beliefs to Evidence. 1 Hour.

Analysis of the role of beliefs about practice in professional culture and how beliefs are affected by the accumulation of research evidence. Topics include the nature of science and beliefs, the nature of evidence, and the debate over evidence-based practice. Students will use topics from their own professional interests for class presentations and written assignments. A minimum of two credits over two successive terms (Fall then Spring) is required (i.e., 1 credit each semester). Note this course alternates in succession with TS900 and TS950, and is offered in the Fall Spring every 3rd year. Prerequisites: Permission of the instructor. LEC.

TS 880. Special Projects. 1-6 Hours.

An elective course to allow student investigation of special issues or problems relevant to applied research and/or practice, under the direction of a faculty member chosen by the student. Systematic coverage of current issues may include a research investigation or study related to pertinent sociocultural trends, practice factors, or emerging issues in service provision. Students will complete special projects such as oral presentations, written papers, or case analysis as negotiate with the faculty member. May be repeated for credit. Prerequisite: Permission of instructor. IND.

TS 900. Evolving Interdisciplinary Views of Disablement. 1 Hour.

Assessment of how our social and cultural context defines notions of disability and disablement in our society. Topics include historical constructs of disability, public policy related to disability, and social paradigms of disability. Students will evaluate views of disablement from the perspective of their own discipline. A minimum of two credits over two successive terms (Fall then Spring) is required (i.e., 1 credit each semester). Note this course alternates in succession with TS850 and TS950, and is offered in the Fall Spring every 3rd year. Prerequisite: Consent of the Instructor. LEC.

TS 950. Designing Effective Knowledge Transfer. 1 Hour.

Examination of the principles of knowledge transfer and diffusion of innovation as they relate to practices in therapeutic professions. Topics include the diffusion process, change agents, innovation adoption, and current diffusion methods. Students will evaluate diffusion processes that have occurred within their own professions. A minimum of two credits over two successive terms (Fall then Spring) is required (i.e., 1 credit each semester). Note this course alternates in succession with TS850 and TS900, and is offered in the Fall Spring every 3rd year. Prerequisite: Consent of the instructor. LEC.

TS 980. Advanced Study in Therapeutic Science. 1-9 Hours.

Students engage in advanced study of a topic of their interest, guided by an appropriate mentor. Options for engaging in learning include directed readings, interpretation of evidence, discussions, and written syntheses of existing literature. Students typically enroll in offerings of this course several times over a series of successive terms, with the course sequence culminating in a written proposal for original research and an oral defense of that proposal (oral comprehensive examination). Prerequisite: Permission of instructor. SEM.

TS 990. Dissertation in Therapeutic Science. 1-9 Hours.

Research experience leading to dissertation for doctoral students in Therapeutic Science. Students enroll in offerings of this course over a series of successive terms, culminating in a written dissertation describing original research and an oral defense of the dissertation research. Prerequisite: Permission of instructor. THE.

Respiratory Care Courses

CVT 20. Cardiovascular Anatomy. 2 Hours.

This course will provide the student with basic cardiovascular terminology, knowledge of congenital heart defects, veins, arteries, coronary vessels and the conduction system. The students will learn cardiac and vascular anatomy in relationship to various cardiovascular procedures. Prerequisite: Admission to the advanced cardiovascular technology program. LEC.

CVT 21. EKG I. 2 Hours.

This course is designed to present basic principles of ECG and the fundamentals of the ECG waveform. The student will be introduced to normal basic pattern and common abnormality recognition. Prerequisite: Admission to the advanced cardiovascular technology program. LEC.

CVT 22. Cardiovascular Physiology. 2 Hours.

During this course the student will focus on cardiovascular physiology. The student will study the circulatory system, addressing the physiology of the heart and blood vessels throughout the body. Prerequisite: Admission to the advanced cardiovascular technology program. LEC.

CVT 23. Patient Care I. 2 Hours.

This course will provide the student with the basic care skills necessary to function in a hospital and clinical setting. The student will learn about patient rights, HIPPA, patient transfers, proper ergonomics of scanning, hand hygiene, sterile technique, radiation safety and infection control. Prerequisite: Admission to the advanced cardiovascular technology program. LEC.

CVT 25. Introduction to Doppler and Instrumentation. 3 Hours.

This course is designed to introduce the student to the fundamental physical principles of Doppler echocardiography. The course will introduce the student to the basic physics of Doppler ultrasound. The student will also be introduced to the fundamental principles of pulsed wave, continuous wave and color flow Doppler. Prerequisite: Admission to the advanced cardiovascular technology program. LEC.

CVT 26. Clinical Practicum I. 8 Hours.

This course will provide meaningful, well-balanced experiences for the student in the electrophysiology lab, cath lab, vascular lab, echocardiography and pediatric echocardiography labs. Clinical Practicum I will focus on the development of image recognition, anatomy identification and patient care. Prerequisite: Admission to the advanced cardiovascular technology program. PRA.

CVT 27. Adult Cardiovascular Technician I. 2 Hours.

This course will introduce the student to the principles of diagnostic cardiac catheterization. The student will learn basic skills to assist the cardiologist during cardiac catheterization procedures. Prerequisite: Admission to the advanced cardiovascular technology program. LEC.

CVT 30. Adult Echocardiography I. 4 Hours.

This course is designed to enable the student to understand the pathophysiology of acquired valvular heart disease. The etiology, physiology, cardiac auscultation, physical examination, symptoms and electrocardiographic findings associated with the various disease states will be covered. Two-dimensional, spectral and color flow Doppler findings associated with each valvular disease state will be evaluated. The student will learn to obtain and effectively apply accurate two-dimensional and Doppler measurements as they relate to evaluation and quantification of valvular disease. Prerequisite: Admission to the advanced cardiovascular technology program. LEC.

CVT 31. Advanced Doppler & Instrumentation. 2 Hours.

This course is designed to enable the student to apply Doppler physics and instrumentation principles to the echocardiography exam. The student will learn how to derive hemodynamic data from the pulsed-wave, continuous wave and color-flow Doppler examinations. The student will learn to effectively acquire accurate Doppler measurements and apply those measurements to the appropriate parameters and equations that are routinely used in the echo lab. Special emphasis will be given to understanding the physical principles governing the ultrasound machine and applying those principles to practice. Prerequisite: Admission to the advanced cardiovascular technology program. LEC.

CVT 32. Pharmacology. 1 Hour.

The student will become familiar with common medicines used in the cardiovascular setting. The student will learn pharmacological management of patients undergoing invasive and non-invasive cardiac and vascular procedures. Students will learn to correlate drug therapies with interventional procedures and disease states. Prerequisite: Admission to the advanced cardiovascular technology program. LEC.

CVT 33. EKG II. 2 Hours.

This course is designed to present advanced principles of ECG. The student will be exposed to advanced pattern recognition and the underlying etiology of the rhythm. Prerequisite: Admission to the advanced cardiovascular technology program. LEC.

CVT 35. Patient Care II. 2 Hours.

This course will provide the student with the advanced care skills necessary to function as a cardiovascular technologist within the laboratory. The student will learn about radiation safety, interpretation of lab values, patient management, high risk patient management, basic life support and advanced cardiac life support. Prerequisite: Admission to the advanced cardiovascular technology program. LEC.

CVT 36. Clinical Practicum II. 10-11 Hours.

The student will have hands-on experience working in their chosen field; catheterization lab, electrophysiology lab, vascular lab or the echocardiography lab. Here they will be given the opportunity to improve their technical skills working one-on-one with their preceptor and

patients in a clinical setting. Prerequisite: Admission to the advanced cardiovascular technology program. PRA.

CVT 39. Adult Echocardiography II. 2 Hours.

This course is designed to enable the student to understand the pathophysiology and echocardiographic findings associated with cardiomyopathies. The etiology, physiology, cardiac auscultation, physical examination, symptoms and EKG findings associated with the various disease states will be covered. The role of two-dimensional, M-mode, color flow and spectral Doppler in the evaluation of the various disease states will be evaluated. The student will learn to obtain and effectively apply accurate two-dimensional and Doppler measurements as they relate to evaluation and quantification of systolic function, diastolic function and the echocardiographic role in evaluation of diseases of the myocardium. Prerequisite: Admission to the program. LEC.

CVT 40. Vascular Ultrasound I. 3 Hours.

Upon completion of this course the student will have the necessary knowledge to perform basic vascular assessments using the appropriate two-dimensional, spectral and color flow Doppler information in the areas of arterial Doppler segmental pressures, plethysmography, ankle brachial indices and carotid duplex imaging. Prerequisite: Admission to the program. LEC.

CVT 41. Pediatric Echocardiography I. 3 Hours.

At the completion of this course the student will demonstrate an understanding of how to utilize a sequential developmental approach to obtain pediatric echocardiographic images. The image display and orientation that is specific to pediatric echocardiography will be defined. This course will review congenital heart diseases and their associated clinical signs and symptoms. Prerequisite: Admission to the program. LEC.

CVT 42. Physics I. 3 Hours.

This is the first of two ultrasound physics courses designed to prepare the student for the Sonography Principles and Instrumentation exam. The content of this course will cover mathematics, sound waves, attenuation, pulsed-wave operation, transducers, systems operations, Doppler, artifacts, bio-effects, contrast, harmonics and quality assurance. The focus of the course will be to help the student understand the physical principles that the ultrasound machine utilizes to create the ultrasound image and help the student appreciate both the capabilities and limitations of imaging with ultrasound. Prerequisite: Admission to the program. LEC.

CVT 43. Adult Interventional Cardiology Technician I. 3 Hours.

The student will receive progressive didactic exposure to the technology, procedures, techniques and basic concepts of interventional cardiology. Prerequisite: Admission to the program. LEC.

CVT 44. Adult Electrophysiology Technician I. 3 Hours.

The student will have didactic exposure to the technology, procedures, techniques and basic concepts of electrophysiology. Prerequisite: Admission to the program. LEC.

CVT 45. Diversity in Cardiovascular Patient Care. 1 Hour.

Explore current evidence regarding the demographic based variations in the population that impact cardiovascular care. Prerequisite: Admission to the program. LEC.

CVT 49. Clinical Practicum III. 7 Hours.

The student will have hands-on experience working in their chosen field; catheterization lab, electrophysiology lab, echocardiography lab, vascular lab or the pediatric echocardiography lab. Here they will be given the opportunity to improve their technical skills working one-on-one with their preceptor and patients in a clinical setting. Prerequisite: Admission to the program. PRA.

CVT 55. Cardiovascular Assessment and Special Procedures. 1 Hour.

This course is designed to acquaint the student with special procedures utilized in the echocardiography laboratory. The student will be familiarized with transesophageal echocardiography, as well as, the benefits of using contrast agents during an echocardiography examination. The student will also be introduced to strain and strain rate imaging along with 3D echocardiography. Prerequisite: Admission to the program. LEC.

CVT 56. Adult Echocardiography III. 2 Hours.

The student will continue to build upon their knowledge of echocardiography by learning cardiac diseases secondary to systemic illness, connective tissue disorders, neurological diseases, hematological disorders, pericardial disease, cardiac tumors, masses and diseases of the great vessels. Prerequisite: Admission to the program. LEC.

CVT 57. Vascular Ultrasound II. 2 Hours.

Upon completion of this course the student will have the necessary knowledge to perform basic vascular assessments using the appropriate two-dimensional, spectral and color flow Doppler information in the areas of upper and lower extremity arterial and venous duplex imaging. Prerequisite: Admission to the program. LEC.

CVT 58. Pediatric Echocardiography II. 2 Hours.

At the completion of this course the student will demonstrate an understanding of aortic arch abnormalities, aortic stenosis and associated obstructive lesions, pulmonary stenosis and associated obstructive lesions, pulmonary atresia with and without VSD, Tetralogy of Fallot, transposition of the great arteries D and L type and truncus arteriosus. Prerequisite: Admission to the program. LEC.

CVT 59. Physics II. 2 Hours.

This is the second of two ultrasound physics courses designed to prepare the student for the Sonography Principles and Instrumentation exam required for registration through ARDMS. The content of this course will cover fluid dynamics, hemodynamics, vascular principles and cardiovascular principles. The content of Physics I will be heavily reviewed in preparation for the registry exam. Prerequisite: Admission to the program. LEC.

CVT 61. Adult Cardiovascular Cardiology Technician II. 3 Hours.

The student will have progressive didactic exposure to the technology, procedures, techniques and concepts of interventional cardiology. Prerequisite: Admission to the program. LEC.

CVT 62. Adult Electrophysiology Technician II. 2 Hours.

The student will have continued progressive didactic exposure to the technology, procedure, techniques, and concepts of electrophysiology. Prerequisite: Admission to the program. LEC.

CVT 63. Patient Care III. 2 Hours.

The continuation of advanced radiographic identification of the cardiac and vascular anatomy will be presented. In addition, the student will learn about coronary artery disease, angina, heart failure, acute coronary syndrome, shock, valvular heart disease and how this knowledge will be used while working in an invasive cardiology setting. Prerequisite: Admission to the program. LEC.

CVT 64. Complex Arrhythmia Assessment. 1 Hour.

During this course the student will assess complex electrocardiography, telemetry, and cardiac arrhythmia cases. The student will evaluate the association of significant arrhythmias with cardiac diseases and common treatment options. Prerequisite: Admission to the program. LEC.

CVT 65. Complex Hemodynamic Assessment. 2 Hours.

The purpose of this course is to provide the student with the knowledge base necessary to understand acquired and congenital cardiovascular diseases, the etiologies associated with the disease state and the presenting clinical signs and symptoms. This course will introduce the student to the principles of hemodynamic monitoring, waveform analysis and interventional cardiovascular procedures. Prerequisite: Admission to the program. LEC.

CVT 66. Adult Interventional Cardiology Technician II. 2 Hours.

The student will have continued progressive didactic exposure to the technology, procedure, techniques, and concepts of interventional cardiology. Prerequisite: Admission to the program. LEC.

CVT 67. Clinical Practicum IV. 10-12 Hours.

The student will have hands-on experience working in their chosen field; catheterization lab, electrophysiology lab, echocardiography lab, vascular lab or the pediatric echocardiography lab. Here they will be given the opportunity to improve their technical skills by working one-on-one with their preceptor in a clinical setting. Prerequisite: Admission to the program. PRA.

CVT 75. Congenital Heart Disease. 2 Hours.

This course will provide students with an overview of congenital heart disease. The student will be given an introduction to the evaluation of congenital heart disease using the segmental approach. Technical considerations will be presented for echocardiographic evaluation of the patient with known or suspected congenital heart disease. Prerequisite: Admission to the program. LEC.

CVT 76. Vascular Ultrasound III. 3 Hours.

Upon completion of this course the student will have the necessary knowledge to perform basic vascular assessments using two-dimensional, spectral and color flow Doppler information in the areas of renal duplex ultrasounds, abdominal aorta and iliac imaging. Prerequisite: Admission to the program. LEC.

CVT 77. Pediatric Echocardiography III. 3 Hours.

Upon completion of this course the student will demonstrate an understanding of Ebstein's malformation of the tricuspid valve, tricuspid atresia with and without D-transposition, partial and complete endocardial cushion defect, cor triatriatum and double outlet right ventricle. Prerequisite: Admission to the program. LEC.

CVT 78. Adult Interventional Cardiology Technician III. 3 Hours.

The student will have continued progressive didactic exposure to the technology, procedure, techniques, and concepts of interventional cardiology. Prerequisite: Admission to the program. LEC.

CVT 79. Adult Electrophysiology Technician III. 2 Hours.

The student will have continued progressive didactic exposure to the technology, procedure, techniques, and concepts of electrophysiology. Prerequisite: Admission to the program. LEC.

CVT 80. Introduction to Cardiovascular Research Principles. 1 Hour.

This course requires the student to research a cardiovascular disease process, write a research paper and present the topic at a cardiology conference in front of peers, nursing personnel, cardiology fellows and the medical staff. The student may include the natural history of the disease process, the historical approach to the diagnosis of the disease, an overview of other modalities used in diagnosing the disease, the imaging techniques used in its diagnosis and the scientific rationale behind the technique. Prerequisite: Admission to the program. LEC.

CVT 81. Concepts in Intravascular Imaging and Intervention I. 2 Hours.

The student will expand their basic knowledge of the various imaging modalities used during vascular interventional procedures and the various endovascular treatments that they will see throughout their careers. Prerequisite: Admission to the program. LEC.

CVT 82. Concepts in Cardiac Rhythm Management I. 2 Hours.

During this course the student will learn the fundamentals of cardiac pacing, will understand the basic techniques for interrogation, programming, surveillance and the measurement of pacing and sensing thresholds of ICDs and CRT-Ds. Upon conclusion of this course the student will be able to recognize normal and abnormal pacemaker function. Prerequisite: Admission to the program. LEC.

CVT 84. Senior Project. 1 Hour.

This course requires the student to research a cardiovascular disease process, write a research paper and present the topic at cardiology conference in front of peers, nursing personnel, cardiology fellows and the medical staff. The student may include the natural history of the disease process, the historical approach to the diagnosis of the disease, an overview of the other modalities used in diagnosing the disease and the scientific rationale behind the technique. In addition, the student may include case studies in the presentation. Prerequisite: Admission to the program. LEC.

CVT 86. Clinical Practicum V. 10-11 Hours.

The student will have hands-on experience working in their chosen field; catheterization lab, electrophysiology lab, echocardiography lab, vascular lab or the pediatric echocardiography lab. Here they will be given the opportunity to improve their technical skills by working one-on-one with their preceptor in a clinical setting. Prerequisite: Admission to the program. LEC.

CVT 89. Vascular Ultrasound IV. 3 Hours.

This course requires the student to research a vascular disease process, write a research paper and present the topic at a cardiovascular conference in front of peers, nursing personnel, cardiology fellows and the medical staff. The student may include the history of the disease process, the approach to the diagnosis of the disease and any other modality used in the diagnosis of the disease. In addition, the student may include case studies in the presentation. Prerequisite: Admission to the program. LEC.

CVT 90. Pediatric Echocardiography IV. 3 Hours.

Upon the completion of this course the student will demonstrate an understanding of partial and total anomalous pulmonary venous return, persistent left superior vena cava, hypoplastic left heart syndrome and single ventricle. Prerequisite: Admission to the program. LEC.

CVT 91. Adult Echocardiography IV. 3 Hours.

This course is designed to enable the student to review the materials covered throughout their time spent in the program, preparing them to step into the profession of echocardiography and become registered through ARDMS by passing their RDCS registration exam. Prerequisite: Admission to the program. LEC.

CVT 94. Concepts in Cardiac Rhythm Management II. 3 Hours.

The student will learn the following basic device knowledge, arrhythmias, remote monitoring management and indications and limitations of biventricular pacing. The student will also learn about echo AV optimization, radiation oncology, MRI, withdrawal of therapy and other specialized inter-departmental workflows. Prerequisite: Admission to the program. LEC.

CVT 95. Concepts in Intravascular Imaging and Intervention II. 3 Hours.

Intravas Imaging Interv II Prerequisite: Admission to the program. LEC.

CVT 97. Clinical Practicum VI. 7 Hours.

The student will have hands-on experience working in their chosen field; catheterization lab, electrophysiology lab, echocardiography lab, vascular lab or the pediatric echocardiography lab. Here they will be given the opportunity to improve their technical skills by working one-on-one with their preceptor in a clinical setting. Prerequisite: Admission to the program. PRA.

Occupational Therapy Doctorate Early Entry Courses**OTDE 700. Professionalism in Occupational Therapy I. 2 Hours.**

This foundational course will support transition to the graduate program and the occupational therapy profession. Students will understand occupation as the foundation of the discipline and discuss the philosophy, history, current practice parameters and future directions of the occupational therapy profession. This course introduces students to constructs of professionalism including ethics and professional behaviors, professional communication/relationships, and professional responsibilities within context of occupational therapy. Prerequisite: Acceptance to the entry-level professional OTD program of study. LEC.

OTDE 705. Foundations in Occupational Therapy Practice I. 6 Hours.

This course addresses foundational elements of occupational therapy practice across contexts (e.g., medical, community, education). Students will use OT practice concepts to gain knowledge of underlying neurological, physiological, psychosocial, and biomechanical considerations impacting occupational performance across the lifespan. Students will participate in self-guided preparation, active learning opportunities, and dynamic interactive discussion to prepare for interprofessional and service learning opportunities. Prerequisite: Acceptance to the entry-level doctoral program in Occupational Therapy. LEC.

OTDE 710. Interprofessional Education in Context. 3 Hours.

This course includes interprofessional opportunities for students to apply professional reasoning through simulations, problem-based learning, service-learning, and fieldwork experiences. Students will gain understanding regarding occupational performance in medical, community, and educational contexts across the lifespan. Students will participate in reflections through small group discussions, apply knowledge from fieldwork experiences, conduct assessments, and develop evidence-based interventions. Students complete two, 8-week rotations in 2 of the 3 context areas. Students will also participate in 30 hours of service learning experiences. Prerequisite: Acceptance to the entry-level professional OTD program. LEC.

OTDE 715. Introduction to Health Professions Scholarship I. 3 Hours.

This course provides a beginning structure for the development of foundational scholarship skills to inform occupational therapy practice. Topics include: university resources for scholarship, finding evidence related to assessment, conditions, populations, patient experiences and understanding evidence provided by books, web resources, practice journals and program evaluation. Students will complete writing assignments, identify key elements of scientific reasoning, and plan program evaluation for a service learning site. Prerequisite: Acceptance to the entry-level professional OTD program. LEC.

OTDE 725. Introduction to Policy for Occupational Therapy. 1 Hour.

This foundational course will introduce health professions policies and their impact on occupational therapy practice across systems.

Students will understand what policy is, why policy matters, and how laws, payment/reimbursement policy, practice acts and regulatory agencies shape our view of health, ability/disability, and OT practice. Prerequisite: Acceptance to the entry-level professional OTD program. LEC.

OTDE 755. Foundations in Occupational Therapy Practice II. 6 Hours.

This course builds on OTDE 705 (Foundations in Occupational Therapy Practice I). This course extends foundational elements of occupational therapy practice across contexts (e.g. medical, community, education). Students will apply OT practice concepts to gain knowledge of underlying neurological, physiological, psychosocial, and biomechanical considerations impacting occupational performance across the lifespan. Students will participate in self-guided preparation, active learning opportunities, and dynamic interactive discussion to prepare for interprofessional and service learning opportunities. Prerequisites: Successful completion of all prior courses required by the OTDE curriculum. LEC.

OTDE 760. Interprofessional Education in Context II. 3 Hours.

This course includes interprofessional opportunities for students to apply professional reasoning through simulations, problem-based learning, service-learning, and fieldwork experiences. In this second semester of the year-long course sequence, students will begin to assume a leadership role in conducting interventions in the medical, community, and educational contexts. Students will lead reflections through small group discussions, conduct assessments, and develop evidence-based interventions. Students will complete their final rotations in 3 context areas and develop a plan for a culminating project to present in the third semester. Prerequisite: Successful completion of all prior courses required by the OTDE curriculum. LEC.

OTDE 765. Occupational Therapy Scholarship II. 3 Hours.

This course builds on the basic scholarship skills and emphasizes development of intermediate skills to inform occupational therapy practice. Topics include: finding evidence related to intervention, preventative strategies, cost-effectiveness of treatments, understanding the contribution of peer-reviewed research articles and developing professional writing skills. Students will analyze evidence, write a critically appraised topic paper, and complete program evaluation of their service learning site. Prerequisite: Successful completion of all prior courses required by the OTDE curriculum. LEC.

OTDE 780. Interprofessional Education in Context III. 3 Hours.

This course includes interprofessional opportunities for students to apply professional reasoning through simulations, problem-based learning, service-learning, and fieldwork experiences. In this third and final semester of the course sequence, students will assume a leadership role in preparing for professional publications and presentations related to the medical, community, and educational contexts. Students will take the lead in conducting a needs analyses to identify strategies for professional communications to promote occupational therapy in their assigned context area. Students will complete a culminating project to present in this final semester. Prerequisite: Successful completion of all prior courses required by the OTDE curriculum. LAB.

OTDE 795. Research Discovery for Occupational Therapy. 2 Hours.

This is the first in a series of courses providing students with experience in evaluating and producing research evidence related to Occupational Therapy theory and practice. The OTDE 795 course introduces students to the process of understanding and appraising research as a platform for developing occupational therapy knowledge to guide practice. Beginning with student insight about OT practice and with input from both community practitioners and faculty, students develop questions aligned with practice needs, then explore existing literature and evidence. Students will collaboratively be introduced to the components of research and

to ways in which research may be conducted. This course will review research ethics, the writing of research questions and hypotheses, sampling strategies, measurement and data collection, components of quantitative and qualitative research, and information about disseminating research. The course will culminate with groups of 2-4 students formulating submitting a written plan for faculty approval, describing a research project addressing a practice question. Prerequisite: Successful completion of all prior courses required by the OTDE curriculum. LEC.