College of Health Sciences

Bonnie L. Van Lunen, Dean
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2114 Health Sciences Building
Norfolk, VA 23529
757-683-4960
http://www.odu.edu/hs

Department of Graduate Studies
Norfolk, VA 23529
757-683-4960
http://www.odu.edu/hs

Doctorate:
- Health Services Research (Ph.D.)
- Physical Therapy (D.P.T.)
- Doctor of Nursing Practice (D.N.P.)
- Kinesiology and Rehabilitation (Ph.D.)

Master's:
- Athletic Training (M.S.A.T.)
- Dental Hygiene (M.S.)
- Nursing (M.S.N.)
- Public Health (M.P.H)
  - Concentrations: Environmental Health, Health Promotion

Linked Programs:
- B.S in Dental Hygiene to M.S in Dental Hygiene
- B.S in Environmental Health to M.S in Community Health

Graduate Certificate Programs:
- Global Health
- Modeling and Simulation in Health Sciences
- Molecular Diagnostics
- Neonatal Physician Assistant
- Nurse Educator
- Nurse Executive
- Nursing in Healthcare Leadership Post Baccalaureate* Pending SCHEV Approval
- Adult Gerontology Clinical Nurse Specialist Post-Professional
- Family Nurse Practitioner Post-Professional
- Healthcare Executive
- Occupational Safety

College Mission
The college mission is to improve individual and community health by advanced professional education, influential research, and responsive service. The vision of the College of Health Sciences is to be an internationally recognized leader in advancing health care by educating competent practitioners, generating practically significant scientific knowledge and innovative technologies, fostering scholarly collaborations, and promoting positive public health policies.

The college consists of the School of Community and Environmental Health, the Gene W. Hirschfeld School of Dental Hygiene, the School of Medical Diagnostic and Translational Sciences, the School of Nursing, and the School of Rehabilitation Sciences. These schools offer a variety of master's and doctoral degrees, and non-degree certificate programs, linked and degree completion programs, and professional continuing education programs. In addition, many of these programs are offered off-campus and in a variety of distance learning formats. The degree programs are competitive, fully accredited, and nationally recognized for their quality graduates.

Program Application, Acceptance, and Continuance
A separate application must be submitted to be considered for acceptance into the health sciences major. Application information, qualifications, deadlines, and advisors are listed in the specific program sections of this catalog and on the web site.

Acceptance to the University does not constitute or guarantee acceptance into a health sciences major. Students are notified by the program director of their acceptance and any other program specific requirements such as physicals, immunizations, technical standards, etc. Continuance in the health sciences majors requires strong academic achievement, including successful demonstration of knowledge and use of practical and critical thinking skills in laboratory and in clinical rotations. Criminal background checks may be required as specified in course syllabi. Any student deemed unacceptable for clinical rotation due to results from a criminal background check will not be allowed to complete the program of study.

The College of Health Sciences has developed graduate programs in the health-related professions that prepare individuals for practice, teaching, research, or administration in health-care delivery to meet the needs of the region, the state, and the nation. These programs include Master of Science degrees in community health and dental hygiene, the Master of Science in Nursing degree, the Master of Public Health degree, the Doctor of Physical Therapy degree, the Doctor of Nursing Practice degree, the Ph.D. in Health Services Research, and the Ph.D. in Kinesiology and Rehabilitation.

Graduate Certificate in Global Health

https://www.odu.edu/hs/centers/globalhealth

TBD, Program Director

Global Health aims to show us the big picture. Mistakenly, people assume that the target of “Global Health” involves mainly tackling problems in the developing world. Diseases and health problems do not recognize borders. All countries can learn from the experiences of other countries. Neglecting to address health problems in a global scale may affect people’s health, well-being and national security around the world including in developed countries such as the United States.

This competency-based certificate program aims to provide comprehensive training on Global Health. Additionally, this certification program embraces a transdisciplinary focus. The Global Health Certificate is designed as an online program for professionals who are practicing or who plan to practice in a worldwide setting. Graduates of the Global Health Certificate can expect to find employment in a variety of fields including health-related governmental/non-governmental organizations, university research programs, international healthcare consultancies, and multinational corporations (Education Advisory Board, 2013). The certificate requires three core courses (3 credit hours each), two electives (2 credit hours each) and a cumulative experience (2 credit hours) for a total fifteen (15) credits. A maximum of 6 credit hours from graduate level courses may be transferred into the certificate program. Admission to the certificate program requires a bachelor’s degree (or the equivalent).

Required Core Courses

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<tr>
<th>Course</th>
<th>Description</th>
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<tbody>
<tr>
<td>HLSC 746</td>
<td>Epidemiology</td>
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<tr>
<td>HLSC 776</td>
<td>Global Health</td>
</tr>
<tr>
<td>HLSC 702</td>
<td>Health Management</td>
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Electives (Select two)

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<thead>
<tr>
<th>Course</th>
<th>Description</th>
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<tbody>
<tr>
<td>HLSC 778</td>
<td>Global Environmental Health</td>
</tr>
<tr>
<td>HLSC 780</td>
<td>Monitoring &amp; Evaluating Global Health Programs</td>
</tr>
<tr>
<td>HLSC 782</td>
<td>One Health, One Medicine</td>
</tr>
<tr>
<td>HLSC 784</td>
<td>Creating Sustainable Environmental Futures</td>
</tr>
<tr>
<td>HLSC 785</td>
<td>Issues and Opportunities in Global Health Research</td>
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Cumulative Experience (Select one)

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<tr>
<th>Course</th>
<th>Description</th>
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<tbody>
<tr>
<td>HLSC 798</td>
<td>Supervised Research</td>
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<tr>
<td>HLSC 768</td>
<td>Practicum in Global Health</td>
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<tr>
<td>HLSC 705</td>
<td>Interprofessional Study Abroad on Global Health</td>
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Ph.D. in Health Services Research

757-683-4960
http://www.odu.edu/academics/programs/doctoral/health-services-research

Dr. Harry Zhang, Graduate Program Director

The primary mission of the Ph.D. in health services research is to develop leaders and problem solvers whose professional services will improve the health of the population not only in Eastern Virginia but also statewide, nationally, and internationally. Health services researchers examine health care quality and effectiveness, primary and managed care, new technologies, and other critical health services and related public health research practice topics. Health services researchers pursue careers in many settings, including academia, industry, professional organizations, research centers, health policy groups, clinical settings, and in federal, state, local, and international agencies.

The goals of the program are to enable students to conduct and interpret health services research, to formulate and analyze public health policy, to lead programs and organizations that address the health care needs of populations and to work directly with community members to empower them to be a part of the policy formulation process. In accomplishing these goals students in the program will develop the critical skills necessary to integrate knowledge and competencies applicable to public health and health services questions and problems. Students will be able to design viable programs, manage resources, and measure the effectiveness of service delivery public health interventions to populations. Students will be awarded the Ph.D. in health services research after the completion of all university and program requirements for graduate degrees.

In addition to demonstrated ability in the health services research competencies, students are expected to select one of two concentrations: Applied Health Research or Health Policy and Management Research.

Applied Health Research concentration will provide students with skills needed to address complex health questions across disciplinary boundaries, advance health-related research and programs, prevent disease and injury, and provide innovative approaches or solve practice-related problems in state and federal agencies, private/non-profit research and evaluation agencies, academia, and health systems.

Health Policy and Management Research concentration will provide students with the skills and systems thinking approaches to formulate and implement health policies, evaluate the effectiveness of policies within a health care organization, and improve the management of health delivery performance in state and federal agencies, private/non-profit research and evaluation agencies, academia, and health systems.

Requirements for Admission

Students are admitted to the Ph.D. program during the fall term only. Applications for admission are reviewed by the Ph.D. in Health Services Research Program admissions committee. To qualify for admission, an applicant must meet the general University admission requirements at the graduate level as well as specific program requirements, including:

1. A completed master’s degree from a program that is accredited by a specialized accrediting agency; degrees such as M.D., J.D., and D.D.S. are also acceptable;
2. A minimum acceptable grade point average of 3.50 (on a 4.0 scale) overall for the master’s degree;
3. Graduate Record Exam (GRE) not required but strongly recommended;
4. For those whose native language is not English a TOEFL score of at least 550 (79 for internet-based test);
5. Official transcripts from all institutions of higher education attended;
6. A current curriculum vitae or resume;
7. Three letters of reference from sources capable of commenting on the applicant’s readiness and commitment for doctoral studies. At least two, and preferably all letters should be from academic sources; other letters must be from professional supervisors;
8. A 1500 word essay discussing the applicant’s academic and professional goals. This essay should discuss how the Ph.D. in Health Services Research program will contribute towards meeting these goals; and
9. A personal interview to discuss applicant’s research focus and fit with the program faculty's expertise.

Prerequisite courses are necessary for students who do not have graduate preparation in basic statistics, research design, and basic computer literacy. Prerequisite courses in health delivery systems and community health may be required for students without academic preparation or experience in these areas.

Complete the application form and submit all required materials to the Office of Admissions, Old Dominion University.

Degree Requirements

1. Satisfactory completion of at least 60 semester hours of graduate level coursework, including all required courses as listed below. (Students who receive two or more grades of C+ or one grade of F may not continue in the program).
2. Two semesters of full-time residency. These do not have to be consecutive.
3. A health services research supervised research experience.
4. Acceptable performance on written and oral candidacy examinations in the major field of study at the end of the program coursework. Students may re-take the candidacy exams only once.
5. Successful defense of a dissertation proposal.
6. Completion of a traditional or three-article dissertation representing the candidate’s ability to conduct scholarly, original research. The quality of the research must be suitable for publication in an academic, peer-reviewed journal.
7. Successful oral defense of the dissertation.
8. Submission of the approved final copy of the dissertation.

Time frames for completion of degree requirement are as follows:

1. The entire process (from admission to dissertation defense) must be completed within eight years. Exceptions to this time limit require the approval of the graduate program director, college dean and the dean of the graduate school.
2. Academic credit which is more than eight years old at the time of graduation must be re-validated by an examination before the work can be applied to a doctoral degree.
3. The dissertation must be completed within five years after the candidacy exams are passed.
4. Dissertations should be defended at least six weeks prior to the end of the semester in which the student expects to graduate.

Each student is required to have an identified research mentor who also serves as their advisory faculty member who will meet with the student upon entry into the program. The faculty member, with the graduate program director, approves the student’s planned coursework (plan of study) and conducts the written and oral candidacy exams at the end of the coursework. Students must maintain a 3.0 grade point average.

Curriculum

The coursework consists of 12 credits of health services core courses, 18 credits of research core courses, 12 credits of track specific courses and 2-3 credits of electives. Track options include: Health Administration and Policy (HAP) or Applied Health Research (AHR). A 1-credit colloquium is required each semester along with coursework (4 course series). Additionally students complete 12 dissertation credits. Up to 9 credit hours of coursework may be at the 600 level. Up to 12 hours of graduate credit may be transferred from another university and applied towards the Ph.D.
degree. Transfer of credit is approved at the discretion of the advisory committee and the graduate program director.

### The Health Services Core

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<tr>
<th>Course</th>
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<tbody>
<tr>
<td>HLSC 776</td>
<td>Global Health</td>
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<tr>
<td>HLSC 801</td>
<td>Introduction to Health Services Research</td>
</tr>
<tr>
<td>HLSC 809</td>
<td>Multidisciplinary Approaches to Health Services Research</td>
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<tr>
<td>HLSC 814</td>
<td>Theory in the Health Sciences</td>
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### Research Core

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<tr>
<th>Course</th>
<th>Title</th>
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<tbody>
<tr>
<td>HLSC 810</td>
<td>Research Design and Application</td>
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<tr>
<td>HLSC 811</td>
<td>Quantitative Research Methods in Health Care</td>
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<tr>
<td>HLSC 812</td>
<td>Qualitative Research Methods</td>
</tr>
<tr>
<td>HLSC 813</td>
<td>Health Outcomes Research</td>
</tr>
<tr>
<td>HLSC 873</td>
<td>Planning Proposals and Developing Grants in Health Research</td>
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<tr>
<td>HLSC 846/746</td>
<td>Epidemiology</td>
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Select one of the following concentrations:  

**Concentration 1: Health Policy and Management Research (HPMR)**

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<tr>
<th>Course</th>
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<tbody>
<tr>
<td>HLSC 802</td>
<td>Health Management</td>
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<tr>
<td>HLSC 864</td>
<td>Health Economics</td>
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<tr>
<td>HLSC 872</td>
<td>Policy and Politics of Health</td>
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<tr>
<td>HLSC 898</td>
<td>Supervised Research</td>
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**Concentration 2: Applied Health Research (AHR)**

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<th>Course</th>
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<tbody>
<tr>
<td>HLSC 785</td>
<td>Issues and Opportunities in Global Health Research</td>
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<tr>
<td>HLSC 815</td>
<td>Decision Analysis in Health Care</td>
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<tr>
<td>CHP 711</td>
<td>Applied Biostatistics for Health Care Research</td>
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<tr>
<td>HLSC 898</td>
<td>Supervised Research</td>
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**Electives: Other concentration courses can be used as an elective. Additional electives with approval of Program Director**

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<tr>
<th>Course</th>
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<tbody>
<tr>
<td>HLSC 706</td>
<td>Leadership in Complex Systems and Organizations</td>
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<tr>
<td>HLSC 778</td>
<td>Global Environmental Health</td>
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<tr>
<td>HLSC 804</td>
<td>Methods of Program Evaluation</td>
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<tr>
<td>HLSC 805</td>
<td>Interprofessional Study Abroad on Global Health</td>
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### Colloquium

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<th>Course</th>
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<tbody>
<tr>
<td>HLSC 889</td>
<td>Colloquium I</td>
</tr>
<tr>
<td>HLSC 890</td>
<td>Colloquium II</td>
</tr>
<tr>
<td>HLSC 891</td>
<td>Colloquium III</td>
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<tr>
<td>HLSC 892</td>
<td>Colloquium IV</td>
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### Dissertation

Dissertation (12 credits)

The candidate’s program of study culminates in a dissertation representing an original research project which makes a real and significant contribution to health services knowledge and practice. The dissertation provides a demonstration of the student’s ability to conduct independent scholarly research in health services research. The dissertation phase begins only after all other degree requirements (coursework, candidacy exams), have been completed. Towards this end, the candidate must form a dissertation committee, write and successfully defend a dissertation proposal, independently conduct the research necessary to complete the dissertation, write the dissertation, successfully defend the dissertation at an oral defense, make any necessary changes based on the committee's recommendation and submit a final approved copy to the dean's office. Additionally, all Ph.D. students are strongly encouraged to prepare as first author at least one journal article based upon their dissertation research prior to graduation.

### Dissertation Committee

After the candidacy exams are successfully passed, the dissertation committee is formed by the student in conjunction with, and approval by, the student's faculty advisor and the graduate program director. A dissertation committee must have at least three members, one of whom is from outside the department of the major field of study. The members of the dissertation committee must all hold doctorates and be graduate certified unless an exception first has been approved by the graduate program director, college dean, and appropriate VP. The committee’s purpose is to supervise the entire process from proposal writing and defense through the oral defense of the dissertation. The faculty mentor supervises and approves the choosing of a topic, the choosing of a theoretical framework, the development of the research methods, the actual conduct of the research and the writing of the results. For either dissertation (traditional or three article) the dissertation committee may not be officially formed until: (1) all coursework is completed; and (2) the candidacy examination has been successfully completed.

### Dissertation Proposal

The dissertation proposal topic selected shall represent a major research project/area which focuses on an issue directly related to health services research and may be multidisciplinary in approach. The traditional dissertation proposal consists of the first three chapters of the dissertation in their entirety, while the Three Article Dissertation consists of Chapters 1 and 2 and any subsequent “article” written as part of the three article dissertation.

The dissertation proposal provides a detailed explanation of the research being proposed, and should address the significance of the study, provide a substantive literature review or systematic review, and describe, in detail, the methods that will be used to collect data. The proposal will be defended in a public forum to which are invited all faculty, staff and students in the college. The final draft of the dissertation proposal must be available for public viewing two weeks before the defense date. No formal work should begin on the dissertation until a majority of dissertation committee members and graduate program director approve the dissertation proposal in writing.

Dissertation proposals can be defended prior to IRB approval/exemption. However, no data collection or interaction with study participants can ever begin until the dissertation chair and the student have obtained IRB approval or exemption. Approval of the dissertation proposal is NOT a pro forma activity and the student is cautioned never to regard it as such.

### Dissertation and Final Oral Defense

The completion of a dissertation is the cornerstone of the Ph.D. program. Through the dissertation, candidates demonstrate that they are prepared to join the company of scholars and to be leaders in health services research.
The candidate should work closely with his/her dissertation committee throughout this process. Dissertations must be carefully prepared, publicly available for viewing, defended in a public forum and approved by the dissertation committee, the graduate program director, and the college dean.

The dissertation committee plays a vital role in the completion of the dissertation. Candidates are expected to be in regular communication with the committee chair and members regarding the progress of the study, research results and manuscript drafts. While preparing a dissertation, candidates must be continuously enrolled for a minimum of one credit hour per semester. University resources may not be used unless a candidate is officially enrolled. Advice or assistance from committee members should not be expected unless the candidate is officially enrolled.

Dissertations must be carefully prepared according to ODU guidelines using the most current version of the Guide for the Preparation of Theses and Dissertations (obtained from The Graduate School). The APA style manual should be used to cover specific questions of style. However, the requirements of the Guide for the Preparation of Theses and Dissertations take precedence over all the guidelines contained in the APA manual. All proposed dissertation research which involves human subjects must be reviewed and approved by the college or University's Human Subjects Committee. The process and approval must be documented in the text of the dissertation. Once the dissertation is successfully defended and in its final form, the student will upload the document to ProQuest.

Once the dissertation committee approves that the dissertation is ready, the student works with the dissertation committee to set a defense date and to ensure that the defense date is made public. The student should provide sufficient copies of the dissertation for public viewing at least two weeks before the defense date. The defense itself needs to be publicized two weeks in advance as well. While the defense is publicized and open to the public in general, care should be taken to ensure that all college faculty and administrators and all departmental students receive invitations to the defense. The entire dissertation committee must attend the final oral dissertation defense. After the dissertation defense, the dissertation committee meets in a closed-door meeting to discuss the dissertation defense and to vote on its approval or disapproval. If the dissertation is not approved, it can be defended only once more (no sooner than three months after the initial defense). The final dissertation must be approved through a signature process that includes the dissertation chair, all members of the dissertation committee, the graduate program director and the dean of the College of Health Sciences. Note that a dissertation may be approved orally at the final defense, but the committee may require some changes before the final copy is approved. Final approval of the written document is the responsibility of the associate dean of the college. The Doctor of Philosophy in Health Services Research will be awarded upon the oral defense of the dissertation, the submission of the final approved copy of the dissertation and the completion of all other program requirements for graduation.

Continuing Education Programs

Short courses, national conferences, workshops, refresher courses, certificate programs and seminars are offered by the different schools in the college on and off campus on a noncredit continuing education (CEU) basis. Professional continuing education programs cover a wide range of topics, including environmental health, dental hygiene, dental assisting, nursing, nuclear medicine technology, health-care management, medical technology, physical therapy, community health, mental health, and chemical dependency.

Continuing education serves the following functions:

- licensure and certification for professionals and practitioners and
- credential and degree achievement and professional development to update knowledge and skills.

Clientele served by the programs include nursing and allied health professionals, human service workers, managers and supervisory personnel, technicians, laboratory personnel, and health educators.

Visit the website to view current offerings.

HEALTH SCIENCES Courses

HLSC 701. Introduction to Health Services. 3 Credits.
HLSC 702. Health Management. 3 Credits.
This seminar will provide students with an understanding of health care organizations and effective management. Particular attention will be given to the issues of access, cost and quality.

HLSC 705. Interprofessional Study Abroad on Global Health. 1-3 Credits.
This study abroad service learning course will introduce the student to the political, social, cultural, and ethical issues involved in prevention and health promotion globally. Students will travel another country and learn the incidence/prevalence, morbidity/mortality, and identified public health problems in specific regions and countries.

HLSC 706. Leadership in Complex Systems and Organizations. 3 Credits.
This course will focus on the leadership that comprises two types: informal and formal leadership. Competencies will include communication, knowledge of health care environment, leadership, professionalism, and business skills.

HLSC 707. Informatics and Healthcare Technology. 3 Credits.
This course will cover the use of data in health care as well as other informatics applications. Students will explore healthcare technology used to improve the delivery and evaluation of care.

HLSC 708. Evidence-Based Management for Quality Healthcare. 3 Credits.
The focus of the course is on the development of system processes to ensure quality health care. The evidence-based model will be applied to organizational systems.

HLSC 709. Multidisciplinary Approach to Health Services Research. 3 Credits.
HLSC 710. Research Design and Application. 3 Credits.
HLSC 712. Qualitative Research Methods. 3 Credits.
HLSC 713. Measurement of Health Phenomena. 3 Credits.
An overview of measurement theory with emphasis on the development, testing, and refinement of norm- and criterion-referenced data collection instruments for health-related research.

HLSC 714. Theory in the Health Sciences. 3 Credits.
HLSC 716. Competitive Resource Design and Utilization. 3 Credits.
This course focuses on the competitive design and utilization of organizational and human resources. Emphasis will be placed on the strategic process to ensure that resources are applied in ways to ensure high-quality care and excellent patient outcomes. The course will cover the business models for effective financial and personnel management of healthcare organizations. Analysis of the costs and quality of care will be performed.

HLSC 746. Epidemiology. 3 Credits.
This course examines epidemiology as a method for viewing inborn community health problems and as a body of knowledge derived from this method. Skills in using epidemiology as a method and as knowledge to solve community health problems will be included.

HLSC 751. Developmental Neonatal Physiology. 2 Credits.
This course provides an in-depth examination of human genetics, embryologic development and normal physiologic functioning of developing body systems. Mechanisms involved in cell division, gametogenesis, and inheritance patterns will be addressed. Basic genetics and epigenetics will be included. The structural and functional development of fetal systems, during critical periods, will be emphasized. Abnormalities and alterations in fetal development will be explored.
HLSC 764. Health Economics. 3 Credits.
Lecture 3 hours; 3 credits. This course describes the application of economic tools to analyze the operation of markets for health care and insurance.
Topics covered include the consumption and costs of health care in the United States, the viewpoints of players in the health care market, and an overview of both supply and demand analysis and cost effectiveness analysis. Complexities of economics unique to health care will be detailed. Further, students will employ these principles in several case studies of current and classic issues in health economics. (Cross-listed with CHP 764).

HLSC 768. Practicum in Global Health. 2 Credits.
Global health related field placement (112 hours).

HLSC 771. Foundations of Advanced Neonatal Care. 3 Credits.
The foundations of advanced neonatal care provides the theoretical and practical knowledge for the neonatal nurse practitioner or physician assistant to manage the health care needs of the neonate in the newborn nursery or level II neonatal intensive care unit.

HLSC 772. Policy and Politics of Health. 3 Credits.
This course enables the student to develop a systematic and analytical framework for understanding health care policy issues. The policy process is covered in detail. Timely policy issues also are discussed.

HLSC 773. Pharmacology for Advanced Neonatal Care. 3 Credits.
This course offers scientific inquiry into the use of pharmacologic agents in the advanced nursing care of infants, including fetal, neonatal life, and early childhood. Pharmacokinetics, pharmacodynamics, drug use in pregnancy and lactation, pharmacologic agents used in disease prevention and treatment, drug monitoring and drug safety in the home are explored.

HLSC 774. Advanced Neonatal Care: High Risk Management I. 3 Credits.
This course develops the students' ability to manage high-risk neonates. This is the second of three sequential management courses that provide the theoretical and practical knowledge for the neonatal nurse practitioner to manage the health care needs of the neonate at the highest level of nursing practice.

HLSC 775. Advanced Neonatal Care: High Risk Management II. 3 Credits.
An organ systems approach is used to explore the diagnosis and management of neonates requiring surgery and advanced technologies. Additional topics will include developmental follow-up of the medically fragile infant and withdrawal of life support in the NICU.

HLSC 776. Global Health. 3 Credits.
This course will introduce the student to the political, social, cultural and ethical issues involved in disease prevention and health promotion globally. Specific emphasis will be on incidence/prevalence, morbidity/mortality, and identified health problems in specific regions and countries. This course will also identify international health prerogatives aimed at improving health status through education and intervention.

HLSC 778. Global Environmental Health. 2-3 Credits.
The goal of this course is to guide students with a public health perspective to develop skills to identify and analyze environmental health problems globally. It is designed to provide knowledge on recognizing and evaluating major environmental health issues and risk factors in developed and developing countries by using group discussions and real-life case studies.

HLSC 780. Monitoring & Evaluating Global Health Programs. 2 Credits.
This course familiarizes students with the basic concepts, issues, theories, approaches and models in evaluation in a global public health context. Students in this course will begin to develop technical skills to conceptualize and design evaluations of global public health programs or projects. These practices include determining which evaluation approach to use in a given context, developing an evaluation plan and appropriate evaluation questions, determining the data needed to answer the evaluation questions and establishing reporting processes to provide information to program developers.

HLSC 782. One Health, One Medicine. 2 Credits.
This course will teach students the applications of multidisciplinary competencies towards solving human health challenges. The course will identify all areas of global health issues that require human, veterinary and environmental applications for solutions. One Health One Medicine is an important course for all students in Health or Environmental Sciences that are called upon to integrate multidisciplinary competencies as part of their education and career experiences.

HLSC 784. Creating Sustainable Environmental Futures. 3 Credits.
This course examines the interrelationships between individual and societal decisions and the global environment, and analyzes the consequences these interrelationships have for public health and sustainability. The course will review food, environmental quality, climate variability, sea-level rise and public health, homes-workplaces-communities, and environmental health and sustainability in the region, the nation and around the world.

HLSC 785. Issues and Opportunities in Global Health Research. 3 Credits.
This course focuses on global health research with an emphasis on cultural, political and economic influences on health in various regions and provides students opportunities to engage in inter-professional teamwork to brainstorm problem-based issues and establish research proposals.

HLSC 795. Topics in Health Sciences. 1-3 Credits.
Designed to provide the advanced student with an opportunity to study independently or in small groups and investigate specific topics of current interest in health services or health sciences.

HLSC 798. Supervised Research. 1-6 Credits.
Supervised research on a specialized topic. Can be repeated.

HLSC 801. Introduction to Health Services. 3 Credits.
Focuses on the complexities involved in providing health services to populations. Presents issues related to public health, community health, urban and rural health, healthy people/communities and health care delivery in traditional and non-traditional settings.

HLSC 802. Health Management. 3 Credits.
This seminar will provide students with an understanding of health care organizations and effective management. Particular attention will be given to the issues of access, cost and quality.

HLSC 804. Methods of Program Evaluation. 3 Credits.
Examination of various methodologies for designing and conducting public health program evaluation and research. Experimental, quasi-experimental and non-experimental procedures will be covered. Prerequisite: HLSC 810 or PAUP 853. Departmental approval required.

HLSC 805. Interprofessional Study Abroad on Global Health. 1-3 Credits.
This study abroad service learning course will introduce the student to the political, social, cultural, and ethical issues involved in prevention and health promotion globally. Students will travel another country and learn the incidence/prevalence, morbidity/mortality, and identified public health problems in specific regions and countries.

HLSC 806. Leadership in Complex Systems and Organizations. 3 Credits.
This course will focus on the leadership that comprises two types: informal and formal leadership. Competencies will include communication, knowledge of health care environment, leadership, professionalism, and business skills.

HLSC 807. Informatics and Healthcare Technology. 3 Credits.
This course will cover the use of data in health care as well as other informatics applications. Students will explore healthcare technology used to improve the delivery and evaluation of care.

HLSC 808. Evidence-Based Management for Quality Healthcare. 3 Credits.
The focus of the course is on the development of system processes to ensure quality health care. The evidence-based model will be applied to organizational systems.
HLSC 809. Multidisciplinary Approaches to Health Services Research. 3 Credits.
Uses theory and research findings from areas such as Biology, Psychology, Sociology, Economics, Urban Studies, and Health Services to achieve an understanding of health services issues and problems. Emphasizes methods of analysis and of developing alternatives related to multidisciplinary perspectives.

HLSC 810. Research Design and Application. 3 Credits.
Emphasis is on exploring the advantages/disadvantages and uses of non-experimental, quasi-experimental, and experimental designs in health-related research with application to management, education, and clinical practice. (cross-listed with PT 810). Prerequisite: graduate-level courses in research design and statistics or permission of the instructor.

HLSC 811. Quantitative Research Methods in Health Care. 3 Credits.
An applied approach to the selection and application of bivariate and multivariate statistical techniques in health services research. Emphasis is placed on handling large data sets and the use of a computer for manipulation of quantitative data. Pre- or corequisite: HLSC 710 or HLSC 810.

HLSC 812. Qualitative Research Methods. 3 Credits.
An exploration of qualitative research methods including participant observation, ethnography and the generation of grounded theory. Individual interviews and focus group methods will be covered and historical, content analysis, phenomenological and montage approaches will also be discussed. Health related examples of published research in a variety of fields will be utilized to exemplify the methods.

HLSC 813. Health Outcomes Research. 3 Credits.
An overview of measurement theory with emphasis on the development, testing, and refinement of norm- and criterion-referenced data collection instruments for health-related research. Prerequisites: graduate-level courses in research design and statistics or permission of the instructor.

HLSC 814. Theory in the Health Sciences. 3 Credits.
Introduces the philosophy of science by studying the nature and purposes of theory for the health sciences. Standards for evaluation of theories will be described. Selected theories and supporting research from the health services literature will be discussed and critically evaluated.

HLSC 815. Decision Analysis in Health Care. 3 Credits.
This course teaches students the art and science of decision making. It covers expected utility theory, decision tree analysis, cost-benefit analysis, and the psychological aspects of the decision-making process in the context of health policy research.

HLSC 816. Competitive Resource Design and Utilization. 3 Credits.
This course focuses on the competitive design and utilization of organizational and human resources. Emphasis will be placed on the strategic process to ensure that resources are applied in ways to ensure high-quality care and excellent patient outcomes. The course will cover the business models for effective financial and personnel management of healthcare organizations. Analysis of the costs and quality of care will be performed.

HLSC 820. Health Care Delivery System. 3 Credits.
This course provides the student with an opportunity to analyze the American health care system. The health care system is composed of complex organizational dynamics and structures which predicate the interaction between the major components of the system: personnel who provide service; institutions in which care is provided; financing mechanisms which pay for care; and the government which attempts to regulate it. This course is designed for in-depth analysis and synthesis of all aspects of health care delivery with an emphasis on improving the delivery and access to care.

HLSC 846. Epidemiology. 3 Credits.
This course examines epidemiology as a method for viewing inborn community health problems and as a body of knowledge derived from this method. Skills in using epidemiology as a method and as knowledge to solve community health problems will be included.

HLSC 861. Advanced Quantitative Methods. 3 Credits.
This course adopts an applied approach to teaching health professions students the necessary competencies and skills in advanced quantitative methods. Topics include handling missing data, survey design and exploratory factor analysis, mediation and moderation analysis, and an introduction to confirmatory factor analysis and structural equation modeling (SEM). Prerequisite: HLSC 811.

HLSC 864. Health Economics. 3 Credits.
This course describes the application of economic tools to analyze the operation of markets for health care and insurance. Topics covered include the consumption and costs of health care in the United States, the viewpoints of players in the health care market, and an overview of both supply and demand analysis and cost effectiveness analysis. Complexities of economics unique to health care will be detailed. Further, students will employ these principles in several case studies of current and classic issues in health economics. (Cross-listed with CHP 764).

HLSC 868. Internship in Health Sciences. 3 Credits.
Supervised health services field experiences or health sciences laboratory experiences. A completed research project which is publishable or presentable at a professional conference is required to complete the course.

HLSC 872. Policy and Politics of Health. 3 Credits.
This course enables the student to develop a systematic and analytical framework for understanding health care policy issues. The policy process is covered in detail. Timely policy issues are also discussed.

HLSC 873. Planning Proposals and Developing Grants in Health Research. 3 Credits.
Designed as a 'hand-on' approach in effective grantsmanship, this course will guide the student from the identification of potential funding sources through proposal development. Highlights include program planning, nonprofit status, governmental/foundation corporate trends, local resources and grants administration.

HLSC 874. Administration in Health Sciences. 3 Credits.
This course will provide an overview of health delivery systems, organizational behavior, and theoretical foundations for managerial and executive leadership in health care facilities. Emphasis will be placed on utilizing best practices in leadership to promote motivation and quality improvement, strategic planning, information technology, and cultural awareness.

HLSC 875. Comprehensive Health Planning. 3 Credits.
This course emphasizes the principles and processes of program planning, including a consideration of objectives, priorities, policy choices, assessment of resources, implementation, and evaluation. The student will gain practical experience in program development by developing a planning document.

HLSC 876. Global Health. 3 Credits.
This course will introduce the student to the political, social, cultural and ethical issues involved in disease prevention and health promotion globally. Specific emphasis will be on incidence/prevalence, morbidity/mortality, and identified health problems in specific regions and countries. This course will also identify international health prerogatives aimed at improving health status through education and intervention.

HLSC 881. Dissertation Seminar. 3 Credits.
This course will assist students in developing a dissertation proposal. Steps in the research process will be reviewed as students submit drafts of their proposal for faculty and peer review. Problem formulation, integrating theoretical frameworks, preparing for human subjects review and outlining data analysis techniques for hypothesis testing will be discussed. Students will be introduced to University guidelines related to dissertations and other resources to assist them in their task.

HLSC 889. Colloquium I. 1 Credit.
This course is the first in a series of colloquial courses in which doctoral level students receive presentations and present research and current topics of interest in health related professions.

HLSC 890. Colloquium II. 1 Credit.
This course is the second in a series of colloquial courses in which doctoral level students receive presentations and present research and current topics of interest in health related professions.
HLSC 891. Colloquium III. 1 Credit.
This course is the third in a series of colloquial courses in which doctoral level students receive presentations and present research and current topics of interest in health related professions.

HLSC 892. Colloquium IV. 1 Credit.
This course is the fourth in a series of colloquial courses in which doctoral level students receive presentations and present research and current topics of interest in health related professions.

HLSC 895. Topics in Health Sciences. 1-3 Credits.
Designed to provide the advanced student with an opportunity to study independently or in small groups and investigate specific topics of current interest in health services. Prerequisites: Ph.D. standing or permission of the graduate program director.

HLSC 897. Independent Study. 1-3 Credits.
Individualized study selected by the student in collaboration with a faculty member. Area of study to be supervised and approved by a faculty member with the approval of the graduate program director. Prerequisites: Admission to Health Services PhD program and permission of graduate program director.

HLSC 898. Supervised Research. 1-6 Credits.
Supervised research on a specialized topic. Can be repeated.

HLSC 899. Dissertation. 1-12 Credits.
Available for pass/fail grading only. An approved research project written under the supervision of a faculty advisor, in which the student demonstrates the capacity to design and complete independent applied research. The completed project must be approved by the dissertation committee.

HLSC 999. Doctoral Graduate Credit. 1 Credit.
This course is a pass/fail course doctoral students may take to maintain active status after successfully passing the candidacy examination. All doctoral students are required to be registered for at least one graduate credit hour every semester until their graduation.