

Post Baccalaureate Doctor of Nursing Practice - Health Data Science Concentration Degree Requirements

NURS 900 - Foundations of Scholarly Writing & Professional Communication

Credits: 3

Reinforces composition and writing skills for academic purposes. Students utilize citations and references in APA 7th edition format to assert that work reflects larger body of literature on the topic of interest. Supports written communication of ideas to inform and persuade a reader on the topic. Effective verbal and nonverbal communication and comportment is emphasized as essential skills for healthcare professionals.

NURS 907 - Advanced Pharmacology & Therapeutics

Credits: 3

Provides the knowledge and skills to assess, diagnose, and pharmacologically manage a patient's health problems in a safe, high quality, cost-effective manner. Emphasis on the development of therapeutic decision-making in drug selection for the patient based on health problems, individual variations, and economic considerations. Focus is on prescriptive practice, client education and monitoring therapeutic response to pharmacological agents in diverse clients across the lifespan.

NURS 908 - Advanced Physiology & Pathophysiology Across the Lifespan

Credits: 3

Provides an advanced understanding of concepts in human physiology and pathophysiology as a foundation for the advanced nursing practice role. Concepts related to biological sciences including cell biology, tumor biology, immunology, genetics, and pathology will be presented. The focus of this course is on principles, theories, and current research related to physiological and pathophysiological system alterations across the lifespan.

NURS 909 - Advanced Health Assessment Across the Lifespan

Credits: 3

Provides knowledge to complete a comprehensive history, physical and mental health exam leading to the development of a differential diagnosis. Incorporates assessing wellness, screening, and chief complaint.

NURS 910 – Genomics & Ethics

Credits: 3

Application of principles of genetics and genomics. Content focuses on genetic and genomic contributions to common and complex disorders and understanding genomic variance, disease phenotype, genomic technologies, and direct-to-consumer testing. The impact of genomics on health and outcomes, quality and safety of patient care are explored. Students critically examine the ethical, social, legal, political, and professional implications of genomics in health care. Challenges to integrating genomic data into clinical practice are investigated.

NURS 925 - Leadership, Role & Collaboration**Credits: 3**

Focuses on theories and principles of leadership, interprofessional collaboration, change management and systems thinking to improve outcomes. Students gain a historical perspective of the expanded roles of nursing as well as the evolution of advanced practice nursing.

NURS 933 Applied Analytics for QI in Health Care**Credits: 3**

Demonstrate the ability to reflect on one's own learning. Use technology to improve learning and understand models of health care systems. Application of theory, review of the literature and population data to frame the QI change project to drive cost-effective safe care.

NURS 944 - Health Promotion Theory & Population Health**Credits: 3**

Provides theoretical foundation and a framework for examining health promotion, population health, health equity and the implementation of community-based interventions. Using current data to improve outcomes. Students develop and evaluate evidence-based population health programs to empower community action.

NURS 963 - Biostats and Epidemiology**Credits: 3**

Application and interpretation of statistical and epidemiological techniques appropriate for health sciences. Prepares students to think quantitatively and assess data critically. Examines principles of statistical inference and their application to the analysis and interpretation for answering practice questions. Students gain experience in interpreting quantitative data.

NURS 964 - Information Systems and Technology Improvement**Credits: 3**

Focuses on nursing informatics knowledge and skills needed to assess, evaluate, and optimize health information systems/technology to support communication, the delivery of high-quality care, and improvement of population health. Emphasis on health care technology design and implementation that addresses industry-specific requirements and the integration of data and systems.

NURS 967 - Evidence Based Practice Methods**Credits: 3**

Application and evaluation of clinical evidence to drive practice decisions that result in high quality care and are cost effective. Identify a problem, plan change to improve a process or outcome, or develop innovative solutions related to health care delivery.

NURS 968 - Foundations of Evidence Based Practice**Credits: 3**

Provides a broad overview of evidence-based advanced practice nursing. Philosophical, conceptual, and theoretical perspectives as well as research methods are examined. Explore the application knowledge to inform, evaluate and translate evidence for practice.

NURS 969 - Health Systems Policy, Economics & Financial Planning**Credits: 3**

Provides a comprehensive, systems thinking approach to include policy, economics and financial principles to promote high quality the health care delivery to individual, populations and communities. Focuses on healthcare issues and advocacy, which influence patient centered policy development and implementation.

NURS 973 - Quality & Safety**Credits: 3**

Explores the theoretical foundations and application of quality improvement methods, tools and strategies needed to increase organizational effectiveness. Focuses on measurement and accountability in health care delivery systems through the examination and analysis of data, structures, processes, and outcomes. Prepares students to lead and practice in organizations that advance high reliability principles, patient safety, interprofessional teamwork, and continuous learning.

NURS 947 - DNP Systems Thinking Seminar I**Credits: 3**

Apply leadership principles in working with members of the healthcare team. Seek collaboration with other professionals to explore the economic, financial, and policy factors. Demonstrate how information and technology guides change. Strategize to reduce error and promote quality and safety in the development of a QI change project. Use theories, methods, and evidence to develop a QI change project implementation plan and obtain baseline data.

NURS 948 - DNP Systems Thinking Seminar II**Credits: 3**

Analyze systems that advance evidence-based principles, patient safety, interprofessional teamwork, and continuous learning. Utilize effective communication in transferring information to all stakeholders. Analyze policy implication on aspect of advanced nursing practice. Continue QI change project with mid and final evaluation point. Expand knowledge of self in your DNP role.

NURS 949 - DNP Systems Thinking Seminar III**Credits: 3**

Apply theory and scientific practice to complete, evaluate and disseminate QI change project finding and improvement plan. Include recommendations for system impact as well as economic, financial and policy implication at the local, state, and national levels. Seeks opportunities to translate and disseminate evidence-based practices to improve system level care and leadership to promote evidence-based change.

HDS 800 - Mathematics and Statistics for Health Data Science**Credits: 3**

This course covers the foundations of probability and inferential statistics as well as foundations of linear algebra and matrices. After completion of this course, students should be comfortable with performing basic analysis of data including descriptive statistics, data visualization and appropriate statistical tests. Different probability distributions will be introduced along with hypothesis testing, confidence intervals, linear regression, and ANOVA.

HDS 802 - Programming in Healthcare Environments

Credits: 3

This course covers using Python as a programming language to write, implement, and design programs that are relevant to various aspects of programming in a health setting. After completion of this course, students should be comfortable with the basic data structures in Python and R (including arrays, dictionaries, and data frames), conditional logic and iterators, writing Python and R functions, and using Python libraries to read external data and perform data manipulations and data analysis.

HDS 803 - Translation of Health Data

Credits: 3

This course will give you the skills you need to leverage data to reveal valuable insights and advance your career. This course teaches you the visualization skills necessary to be effective Data Storytellers which helps engage your audience in a story about the data. This course focuses on concepts as well as hands-on experience of presenting data from initial concepts to final presentation by creating meaningful displays of quantitative and qualitative data to facilitate peer/managerial decision making.

HDS 804 - Health Data Systems

Credits: 3

In this course, students will learn the landscape of data used in healthcare settings, engage in active case applications and case studies, and propose a decision support system improvement. It examines modern decision support systems, types of applications, both mobile and web based, enterprise versus cloud-based systems. Specifically examined will be the Electronic Health Record (EHR) and other clinical and administrative information systems. Also examined will be interoperability and regulatory requirements.

HDS 806 - Outcomes Research

Credits: 3

This course examines the evidence developed through the lens of outcomes research relative to clinical care and public/population health initiatives. It explores the development of study design, developing a workable research question and associated proposed study methods. The course explores frequently used study designs, techniques for evaluating/selecting health outcomes measures, and analytical approaches appropriate to conducting health outcomes research. Students will construct an independent research protocol, which will be developed in increments as course evolves.

HDS 811 - Health Data Science Practice

Credits: 3

In this course, students will work to develop a data science thesis project with both an outside mentor and a faculty advisor. This course essentially bridges the entire curriculum but builds over the coursework to the final presentation at the students' second residency prior to completing the program. Each student on a team will be required to justify the completion of practicum hours.