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Course Descriptions

DNAP 6400 Population Health and Epidemiology (2)

This course provides students with the opportunity to understand the use of epidemiology to design and manage advanced healthcare for populations and evaluate health outcomes. The course serves to enhance knowledge in analytic methods, policy, systems and leadership that includes an overview of the study and distribution of determinants of health and disease in specified populations, and the application of this study to the promotion of health, prevention and control of disease, design of healthcare services, and initiation of health policy for populations served by healthcare systems.

DNAP 7000 Advanced Health Assessment (4)

This course explores advanced health assessment through obtaining an extensive health history and physical examination. The course is designed to assist students in refining their history taking, psychosocial assessment, and physical assessment skills. Content focuses on assessment of individuals throughout the lifespan. Emphasis is placed on detailed health history taking, differentiation, interpretation and documentation of normal and abnormal findings. The course includes lecture, discussion and demonstration of history taking and an integrated physical assessment.

DNAP 7100 Introduction to Anesthesia (3)

This is the first anesthesia course designed to introduce the student to the professional aspects guiding the nurse anesthesia practice including professional development, and the ethical, social and legal issues facing the profession. The course also includes orientation to the basic physical facility, equipment, fundamental pharmacology, anesthetic techniques, historical perspectives and specialities in the field of anesthesia. Students will be introduced to case planning, standards of practice, systematic strategies for pre-anesthetic assessment and analyzing physiological principles. This course includes state-of-the-art computer simulation to assist in developing the initial skills required for administering anesthesia. Professional development opportunities occur through the attendance of local, state and national anesthesia meetings. This course includes a multi-day orientation to clinical experiences. **Co-requisite**: DNAP 7150.

DNAP 7150 Clinical Simulation Experience I (2)

Clinical Simulation Experiences are designed and presented in progression that prepare students for entry into the clinical area. Entering into the operating room for the first time to provide anesthesia services is daunting for both the novice graduate student and the assigned clinical preceptor. Spending time in a simulated OR providing anesthesia to a high-fidelity fully automated mannequin in clinical scenarios facilitates the process of creating experiences without compromising patient safety. The Clinical Simulation Experience courses are designed to provide a progressive and integrative experience that coincides with didactic coursework. This lab assignment introduces the graduate student to the fundamental processes, pharmacology and monitoring associated with the induction of anesthesia. **Co-requisite**: DNAP 7100.

DNAP 7200 Basics of Anesthesia (3)

DNAP 7200 Basics of Anesthesia, a continuation of Introduction to Anesthesia, is designed to introduce the student to the professional aspects of nurse anesthesia practice as well as an in-depth orientation to a basic anesthesia equipment, fundamental pharmacology, and primary anesthetic techniques. Students will be introduced to case planning, standards of practice, the pre-anesthetic assessment and analyses of physiological parameters. This course provides access to state-of-the-art simulation OR and dry skills labs to assist the graduate student in building their foundational skills commensurate with administering safe anesthesia. Professional development opportunities may occur during this course through attendance of local, state and national anesthesia meetings. **Prerequisite**: DNAP 7100. **Co-requisite**: DNAP 7250.

DNAP 7250 Clinical Simulation Experience II (2)

Clinical Simulation Experience II will build on previous simulation and classroom experiences resulting in increasingly complex patient scenarios requiring the graduate student to manage through the provision of current evidence-based anesthesia research. The complexity of simulation scenarios increase as the anesthesia curriculum progresses. **Prerequisite**: DNAP 7150. **Co-requisite**: DNAP 7200.

DNAP 7300 Principles of Anesthesia I (3)

Principles of Anesthesia I is the first of a two course series designed to develop the student in the art and science of nurse anesthesia practice. Continued discussions of professional aspects and anesthetic principles will take place through the introduction of comprehensive anesthetic planning, monitoring, exploration of co-existing disease states, and associated pharmacology. This course will address general surgical procedures to include laparoscopic approaches. Participation in state-of-the-art simulation OR and dry skills labs is provided to assist the graduate student in integrating the didactic content and development of clinical skills. Professional development opportunities occur through the attendance of local, state and national anesthesia meetings. **Prerequisite**: DNAP 7200. **Co-requisite**: DNAP 7350.

DNAP 7350 Clinical Simulation Experience III (4)

Clinical Simulation Experience III continues to build on previous simulation and classroom experiences resulting in increasingly complex patient scenarios requiring the graduate student to manage, guided by the current evidence-based anesthesia provision. Development of critical thinking skills becomes necessary. Complexity of scenarios will advance commensurate with the anesthesia curriculum. **Prerequisite**: DNAP 7250. **Co-requisite**: DNAP 7300.

DNAP 7400 Principles of Anesthesia II (3)

Principles of Anesthesia II is a continuation of Principles of Anesthesia I. This course will focus on the pathophysiology, medical, and systems management during anesthesia care provision for those undergoing orthopedic, vascular, renal hepatic, ENT and eye surgery. Participation in state-of-the-art computer simulation operating room and dry skills labs will occur to assist

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the graduate student in further integrating didactic content and theory into practice. **Prerequisite**: DNAP 7300. **Co-requisite**: DNAP 7450.

DNAP 7450 Clinical Simulation Experience IV (2)

Clinical Simulation Experience IV continues to build on previous simulation and classroom experiences resulting in increasingly complex patient scenarios requiring the graduate student to manage, providing the most current evidence-based anesthesia provision. Development of critical thinking skills will continue to occur. Complexity of scenarios will advance commensurate with the anesthesia curriculum. At the end of Clinical Simulation Experience IV, the nurse anesthesia graduate student will be ready to enter as a beginner in the operating suite under complete supervision. **Prerequisite**: DNAP 7350. **Co-requisite**: DNAP 7400.

DNAP 7501 Translational Research Project I (1)

The design of this course is progressive, culminating in a doctoral research project. The course offers the student the opportunity to do research under the direction of a member of Webster University faculty. The student will begin with a proposal and progress through research design, literature search, implementation of the research project and developing presentation of data from the research, culminating in a fully developed research manuscript and oral defense of the work. **Prerequisite**: AHP 7500.

DNAP 7502 Translational Research Project II (1)

The design of this course is progressive, culminating in a doctoral research project. The course offers the student the opportunity to do research under the direction of a member of Webster University faculty. The student will begin with a proposal and progress through research design, literature search, implementation of the research project and developing presentation of data from the research, culminating in a fully developed research manuscript and oral defense of the work. **Prerequisite**: DNAP 7501.

DNAP 7503 Translational Research Project III (1)

The design of this course is progressive, culminating in a doctoral research project. The course offers the student the opportunity to do research under the direction of a member of Webster University faculty. The student will begin with a proposal and progress through research design, literature search, implementation of the research project and developing presentation of data from the research, culminating in a fully developed research manuscript and oral defense of the work. **Prerequisite**: DNAP 7502.

DNAP 7504 Translational Research Project IV (1)

The design of this course is progressive, culminating in a doctoral research project. The course offers the student the opportunity to do research under the direction of a member of Webster University faculty. The student will begin with a proposal and progress through research design, literature search, implementation of the research project and developing presentation of data from the research culminating in a fully developed manuscript and oral defense of the work, culminating in a fully developed research manuscript and oral defense of the work. **Prerequisite**: DNAP 7503.

DNAP 7505 Translational Research Project V (1)

The design of this course is progressive, culminating in a doctoral research project. The course offers the student the opportunity to do research under the direction of a member of Webster University faculty. The student will begin with a proposal and progress through research design, literature search, implementation of the research project and developing presentation of data from the research, culminating in a fully developed research manuscript and oral defense of the work. **Prerequisite**: DNAP 7504.

DNAP 7506 Translational Research Project VI (1)

The design of this course is progressive, culminating in a doctoral research project. The course offers the student the opportunity to do research under the direction of a member of Webster University faculty. The student will begin with a proposal and progress through research design, literature search, implementation of the research project and developing presentation of data from the research, culminating in a fully developed manuscript and oral defense of the work. **Prerequisite**: DNAP 7505.

DNAP 7507 Translational Research Project VII (1)

The design of this course is progressive, culminating in a doctoral research project. The course offers the student the opportunity to do research under the direction of a member of Webster University faculty. The student will begin with a proposal and progress through research design, literature search, implementation of the research project and developing presentation of data from the research, culminating in a fully developed manuscript and oral defense of the work. **Prerequisite**: DNAP 7506.

DNAP 7508 Translational Research Project VIII (1)

The design of this course is progressive, culminating in a doctoral research project. The course offers the student the opportunity to do research under the direction of a member of Webster University faculty. The student will begin with a proposal and progress through research design, literature search, implementation of the research project and developing presentation of data from the research, culminating in a fully developed manuscript and oral defense of the work. **Prerequisite**: DNAP 7507.

DNAP 7550 Introduction to Clinical Experience (2)

Clinical experiences are designed to provide a progressive and integrative experience that coincide with didactic coursework. The clinical experiences are supervised by licensed providers. The nurse anesthesia resident may be required to attend simulation and dry skills lab sessions to augment classroom and clinical learning. This closely supervised introductory clinical course experience serves primarily to orient the novice student to the

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operating room/anesthesia suites. Students will observe the process from obtaining a history and physical from the patient to preparing the anesthesia cart and machine check to inducing, maintaining and emergence to finally handing the patient over to the recovery room nurses and everything in between. As the term progresses the resident will be provided opportunities for management of ASA I-V patients to include all peri-anesthetic and patient assessment activities for general, regional and MAC anesthesia. **Prerequisite**: DNAP 7450.

DNAP 7650 Clinical Experience I (2)

Clinical experiences are designed to provide a progressive and integrative experience that coincide with didactic coursework. The clinical experiences are all supervised and are divided into levels (beginner, intermediate and advanced), each building on the previous level. Nurse anesthesia residents will have completed 4 terms of Clinical Simulation education prior to entering the operating room, fostering enhanced skills and management development. This experience focuses primarily on the management of ASA I and II patients, although the management of ASA III through V cases may be included. It includes all pre-anesthetic and patient assessment activities for general, regional and MAC anesthesia, and administration of the the anesthetic and post-anesthesia care. A weekly case conference following the clinical experience will assist the nurse anesthesia resident in the integration of academic and clinical content. All case experiences will assist the resident in meeting the guidelines and requirements for the National Certification Examination. **Prerequisite**: DNAP 7550.

DNAP 7750 Clinical Experience II (2)

All subsequent clinical experiences are designed to provide a progressive and integrative experience that coincides with didactic coursework. The clinical experiences are all supervised and have been divided into levels (beginner, intermediate and advanced), each building on the experience of the previous level. **Prerequisite**: DNAP 7650. **Co-requisite**: DNAP 8100.

DNAP 7850 Clinical Experience III (2)

All subsequent clinical experiences are designed to provide a progressive and integrative experience that coincides with didactic coursework. The clinical experiences are all supervised and have been divided into levels (beginner, intermediate and advanced), each building on the experience of the previous level. **Prerequisite**: DNAP 7750. **Co-requisite**: DNAP 8200.

DNAP 7900 Pharmacology I (3)

This course is the first in a series of four pharmacology courses. In this course the emphasis is placed on the fundamental pharmacological principles of pharmacodynamics, pharmacokinetics, pharmacotherapeutics, drug metabolism and toxicology, with a special emphasis on acid-base metabolism, autonomic pharmacology, somatic motor pharmacology and neuropharmacology.

DNAP 8000 Advanced Pharmacology II (3)

This course, the second in a series of pharmacology courses, specifically addresses intravenous anesthetic agents. Pharmacology II provides a more nuanced examination of the pharmacokinetics and pharmacodynamics sedative/hypnotic agents, muscle relaxants and adjuvant drugs used in anesthesia. The scope of pharmacology is widened to include the effects of anesthetic drugs on the nervous system. The autonomic, sympathetic, parasympathetic and central nervous systems will be thoroughly examined. **Prerequisite**: DNAP 7900.

DNAP 8010 Advanced Pharmacology III (3)

This course, the third in a series, specifically addresses agents affecting/manipulate the cardiovascular, respiratory and endocrine systems. Non-anesthetic agents related to the practice of anesthesia, such as antibiotic, antifungal and antiviral therapies utilized for HIV, TB, hepatitis, hematologic and oncologic disorders will be presented. Dermatologic and gastrointestinal pharmacology will be presented as they relate to anesthesia using the clinic practicum and with special focus on clinical applications. **Prerequisite**: DNAP 8000.

DNAP 8020 Advanced Pharmacology IV (3)

Pharmacology IV, the fourth course in the series, emphasizes the agents related to chronic pain management that includes non-surgical and holistic therapies. **Prerequisite**: DNAP 8010.

DNAP 8050 Clinical Experience IV (2)

At the intermediate level, the nurse anesthesia resident begins full-time clinical experiences, which are designed to provide anesthetic experiences in both general and specialty practice settings. These supervised experiences can include obstetrics, radiology, pediatrics, cardiothoracic and neurosurgical procedures. In addition, the nurse anesthesia resident may gain experience in pain management, including multiple regional techniques with/without ultrasound guidance as well as experiences in the pulmonary and cardiac clinics, intensive care units, and radiology labs. Clinical course scheduling is guided by case requirements representative of the National Certification Examination. **Prerequisite**: DNAP 7850. **Co-requisite**: DNAP 8300.

DNAP 8100 Anesthesia Concepts I (3)

This course continues to build on the foundation provided by the Principles of Anesthesia courses. It will focus on the broad reaching physiologic changes associated with the obstetric patient and the advanced techniques and procedures required to manage this complicated patient to keep the mother and fetus safe. The placement and management of labor epidurals and spinal techniques for Cesarean sections will be discussed and demonstrated. Ultrasound guided techniques will be presented for the difficulty placement scenario. State-of-the-art computer simulation to assist in the integration of didactic content occurs through the attendance of local, state and national anesthesia meetings. **Prerequisite**: DNAP 7400. **Co-requisite**: DNAP 7750.

DNAP 8150 Clinical Experience V (2)

At the intermediate level, the nurse anesthesia resident begins full-time clinical experiences that are designed to provide anesthetic experiences in general as well as specialty practice settings. These supervised experiences can occur in obstetrics, radiology, pediatrics, cardiothoracic and neurosurgical procedures. In addition, the nurse anesthesia resident may gain experience in pain management, to include multiple regional techniques and ultrasound guided regional techniques as well as experiences in the pulmonary clinic, cardiology clinical, intensive care units and radiology labs. Nurse anesthesia residents will utilize advanced anesthetic management techniques involving medically complex patient management. Clinical course scheduling is guided by case requirements representative of the National Certification Examination **Prerequisite**: DNAP 8050. **Co-requisite**: DNAP 8400.

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DNAP 8200 Anesthesia Concepts II (3)

This course is an extension of DNAP 8100 Anesthesia Concepts I and includes the presentation of techniques and monitoring related to regional and cardiothoracic anesthesia. The advanced principles and techniques associated with each of these specialty areas of practice will be fully explored. Integration of didactic content will occur through the use of state-of-the-art computer simulation and DNAP 7850 Clinical Experience III and throughout the remainder of the program. Professional development opportunities occur through the attendance of local, state and national anesthesia meetings. **Prerequisite**: DNAP 8100. **Co-requisite**: DNAP 7850.

DNAP 8250 Clinical Experience VI (2)

At the intermediate level, the nurse anesthesia resident begins full-time clinical experiences that are designed to provide anesthetic experiences in general as well as specialty practice settings. These supervised experiences can occur in obstetrics, radiology, pediatrics, cardiothoracic and neurosurgical procedures. In addition, the nurse anesthesia resident may gain experience in pain management, to include multiple regional techniques and ultrasound guided regional techniques as well as experiences in the pulmonary clinic, cardiology clinical, intensive care units and radiology labs. Nurse anesthesia residents will utilize advanced anesthetic management techniques involving medically complex patient management. All case scheduling will lead toward the requirements for the National Certification Examination. **Prerequisite**: DNAP 8150. **Co-requisite**: DNAP 8500.

DNAP 8230 Politics and Economics of Health Care (3)

This course involves a study of the major pillars of healthcare politics and economics: cost, professional practices and innovations. The business of anesthesia and practice management along with healthcare finance principles will be addressed in this course.

DNAP 8240 Health Care Policy Analysis and Advocacy (3)

This course prepares the advanced practice nurse leader to advance the agenda of the rapidly changing healthcare environment by examination of health policy research and analysis. Students will focus on policy process and develop and implement policy agendas. Participate in collective decision making. Identify roles and key stakeholders. The course will address how to identify gaps in policy knowledge and provide opportunity for nurse leaders to engage in processes that influence policy decisions at the institutional, local, state, regional, national and/or international levels. The course will prepare the nurse leader to analyze the policy process and engage in politically competent care.

DNAP 8300 Anesthesia Concepts III (3)

This course is a continuation of Anesthesia Concepts II and includes the presentation of advanced techniques and monitors in anesthesia as it relates to the specialty areas of regional, pediatric and obstetric anesthesia care. The advanced principles and techniques associated with each of these specialty areas of practice will be discussed. The topics are integrated with learning labs, continuing clinical experiences in DNAP 8050 Clinical Experience IV and throughout the remainder of the program. State-of-the-art computer simulation to assist in the integration of didactic content and clinical skills is included. Professional development opportunities occur through the attendance of local, state and national anesthesia meetings. **Prerequisite**: DNAP 8200. **Co-requisite**: DNAP 8050.

DNAP 8350 Clinical Experience VII (2)

At the intermediate level, the nurse anesthesia resident begins full-time clinical experiences that are designed to provide anesthetic experiences in general as well as specialty practice settings. These supervised experiences can occur in obstetrics, radiology, pediatrics, cardiothoracic and neurosurgical procedures. In addition, the nurse anesthesia resident may gain experience in pain management, to include multiple regional techniques and ultrasound guided regional techniques as well as experiences in the pulmonary clinic, cardiology clinical, intensive care units and radiology labs. Nurse anesthesia residents will utilize advanced anesthetic management techniques involving medically complex patient management. All case scheduling will lead toward the requirements for the National Certification Examination. **Prerequisite**: DNAP 8250. **Co-requisite**: DNAP 8510.

DNAP 8400 Anesthesia Concepts IV (3)

This course is a continuation of Anesthesia Concepts III and includes the presentation of advanced techniques and monitoring in anesthesia specifically related to the specialty areas of regional anesthesia techniques and acute pain management. The advanced principles and techniques associated with each of the speciality areas of practice will be presented, discussed, explored and demonstrated through the use of high-fidelity mannequins and ultrasound. In this course, through the use of ultrasound, evaluate normal anatomy, identify nerve anatomy and learn ultrasound-guided techniques. The topics are also integrated with learning labs, workshops, continuing clinical experiences and throughout the remaining of the program. State-of-the-art computer simulation to assist the graduate student in the integration of didactic and clinical skills is included. Professional development opportunities occur through the attendance of local, state and national anesthesia meetings. **Prerequisite**: DNAP 8300. **Co-requisite**: DNAP 8150.

DNAP 8410 Anesthesia and Coexisting Diseases (3)

This course integrates the clinical pharmacology of anesthesia with coexisting disease states and the perioperative implications to anesthesia care. Content is paired and coordinated in conjunction with the advanced principles of anesthesia course and expands on physiology and pathophysiology taught in previous semesters. Additionally, content is integrated and applied to nurse anesthesia practice.

DNAP 8430 Health Administration Law and Ethics (3)

The course introduces the law and legal processes that affect health administration. The course presents an overview of legal principles concerned with torts, contracts and liability in health administration, including the legal standing of individuals covered by various types of health administration. Legal elements of labor relations in the healthcare field and the legal obligations and malpractice law are discussed as they apply to health professionals.

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DNAP 8440 Advanced Practice Nurse Role in Leadership and Health Care (3)

This course will introduce the student to the multiple roles of the advanced practice nurse. Historical, professional, political and cultural components of the roles are presented as well as legal and ethical issues faced by advanced practice nurses. The business areas of advanced nursing practice, such as management, reimbursement and finance. Role development challenges, such as chemical dependence and wellness, inter professional collaboration, etc.

DNAP 8450 Clinical Experience VIII (2)

At the intermediate level, the nurse anesthesia resident begins full-time clinical experiences that are designed to provide anesthetic experiences in general as well as specialty practice settings. These supervised experiences can occur in obstetrics, radiology, pediatrics, cardiothoracic and neurosurgical procedures. In addition, the nurse anesthesia resident may gain experience in pain management, to include multiple regional techniques and ultrasound guided regional techniques as well as experiences in the pulmonary clinic, cardiology clinical, intensive care units and radiology labs. Nurse anesthesia residents will utilize advanced anesthetic management techniques involving medically complex patient management. All case scheduling will lead toward the requirements for the National Certification Examination. **Prerequisite**: DNAP 8350. **Co-requisite**: DNAP 8520.

DNAP 8500 Current Topics in Anesthesia I (1)

The science guiding anesthesia practice is dynamic. Nurse anesthetists must stay current in research regarding physiology and pharmacology and best practice strategies. Interdisciplinary collaboration is necessary to ensure patient safety and best outcomes. Maintaining current evidence-based knowledge in content areas include complex equipment, pharmacological agents and procedures necessary for the provision of quality patient care. Course discussions are designed to facilitate the nurse anesthesia resident in incorporating current evidence-based research into practice to facilitate meeting these demands. **Co-requisite**: DNAP 8250.

DNAP 8510 Current Topics in Anesthesia II (1)

The science guiding anesthesia practice is dynamic. Nurse anesthetists must stay current in research regarding physiology and pharmacology and best practice strategies. Interdisciplinary collaboration is necessary to ensure patient safety and best outcomes. Maintaining current evidence-based knowledge in content areas include complex equipment, pharmacological agents and procedures necessary for the provision of quality patient care. Course discussions are designed to facilitate the nurse anesthesia resident in incorporating current evidence-based research into practice to facilitate meeting these demands. **Co-requisite**: DNAP 8350.

DNAP 8520 Current Topics in Anesthesia III (1)

The science guiding anesthesia practice is dynamic. Nurse anesthetists must stay current in research regarding physiology and pharmacology and best practice strategies. Interdisciplinary collaboration is necessary to ensure patient safety and best outcomes. Maintaining current evidence-based knowledge in content areas include complex equipment, pharmacological agents and procedures necessary for the provision of quality patient care. Course discussions are designed to facilitate the nurse anesthesia resident in incorporating current evidence-based research into practice to facilitate meeting these demands. **Co-requisite**: DNAP 8450.

DNAP 8530 Current Topics in Anesthesia IV (1)

The science guiding anesthesia practice is dynamic. Nurse anesthetists must stay current in research regarding physiology and pharmacology and best practice strategies. Interdisciplinary collaboration is necessary to ensure patient safety and best outcomes. Maintaining current evidence-based knowledge in content areas include complex equipment, pharmacological agents and procedures necessary for the provision of quality patient care. Course discussions are designed to facilitate the nurse anesthesia resident in incorporating current evidence-based research into practice to facilitate meeting these demands. **Co-requisite**: DNAP 8550.

DNAP 8550 Clinical Experience IX (2)

Clinical experiences at the advanced level continues to be supervised with greater expectation placed on the nurse anesthesia resident to demonstrate increasing autonomy and utilization of appropriate critical thinking and decision-making skills in the management of all classifications of patient from ASA I-V and emergencies requiring anesthesia care. All case scheduling will lead toward the requirements for the National Certification Examination. **Prerequisite**: DNAP 8450. **Co-requisite**: DNAP 8530.

DNAP 8650 Clinical Experience X (2)

Clinical experiences at the advanced level continues to be supervised with greater expectation is placed on the nurse anesthesia resident to demonstrate increasing autonomy and utilization of appropriate critical thinking and decision-making skills in the management of all classifications of patient from ASA I-V and emergencies requiring anesthesia care. All case scheduling will lead toward the requirements for the National Certification Examination. **Prerequisite**: DNAP 8550.

DNAP 8700 Pharmacogenomics (2)

Pharmacogenetics/phamacogenomics is the study of how an individual's genetic inheritance affects the body's response to drugs. This course will examine factors that affect drug response including genetics as well as additional factors such as environment, diet, age, and concurrent drug therapy and health status. Methods important to pharmacogenomics research will be presented. The course will use a combination of lectures, assignments (including discussion board activities) and student-led discussion of recent papers from the primary literature. The goal of this course is to provide students an understanding of pharmacogenetics/pharmacogenomics in the context of variability in drug response and the application of pharmacogenetics to drug development and drug treatment.