Doctor of Nursing Practice in Nurse Anesthesia

Degree Offered

- Doctor of Nursing Practice

Nature of the Program

DESCRIPTION

The DNP Nurse Anesthesia Program prepares registered nurses to become Certified Registered Nurse Anesthetists (CRNAs) through a rigorous, challenging curriculum based on the Standards of Accreditation from the Council on Accreditation of Nurse Anesthesia Educational Programs (COA) and the DNP Essentials of the American Association of Colleges of Nursing (AACN). Only offered as a full-time program, students are required to take 88 credits over 3 years or 9 continuous semesters. The program is not yet accredited but is seeking accreditation through the COA. An accreditation decision is anticipated in Fall, 2019.

Nurse anesthesia practice covers the continuum of care from pre-operative assessment to discharge from the recovery unit. Nurse anesthetists interview and assess each patient to best formulate and implement an individualized plan of care while collaborating with members of a multi-disciplinary health care team. This curriculum features courses that prepare nurse anesthetists to translate evidence to practice and become organizational leaders. The DNP Nurse Anesthesia program prepares students through course work that develops knowledge and skill in anesthesia practice as well as in translation and implementation of evidence to practice to improve health outcomes for diverse populations.

Courses are divided into four categories, including core DNP, anesthesia specialty, clinical practicum, and DNP project offerings. Core DNP courses are offered online and address foundations of nursing theory, assessment, pharmacology, statistics, evidence-based practice methods, health promotion, informatics, leadership, ethics, and health policy. Anesthesia specialty courses are face-to-face classes with online capabilities. They are heavily based in sciences including chemistry, physics, advanced anatomy, physiology, pathophysiology, pharmacology, and basic and advanced principles of anesthesia. Additional specialty courses present physical assessment and principles of business, management, and finance pertinent to anesthesia practice. Clinical practicum begins in the third semester and provides the student the opportunity to integrate didactic content with application of state-of-the-art techniques in the provision of anesthesia care to patients in all risk categories and age ranges in a variety of health care settings. Students are required to administer a minimum of 600 anesthetics and complete over 2000 clinical hours; however, graduating WVU DNP nurse anesthetists will likely exceed that minimum. DNP project courses are incorporated early in the curriculum to give the student and faculty time to develop a project question, perform a literature search, refine and implement an initiative, collect and analyze data, and write a manuscript. The DNP Project manuscript and a portfolio of course work will demonstrate a synthesis of the student’s efforts in the program and will lay the foundation for future clinical scholarly initiatives directed at improving health and organizational outcomes in nurse anesthesia practice.

The graduate will earn a DNP degree and be eligible to sit for the National Certification Exam (NCE). This is a board exam administered by the National Board of Certification and Recertification of Nurse Anesthetists (NBCRNA). Graduates who pass the Certification Exam become Certified Registered Nurse Anesthetists. Certified graduates have the opportunity to practice in traditional hospital operating suites; ambulatory surgical centers; offices of dentists, podiatrists and pain management specialists; or in a wide variety of settings including the U.S. military and Public Health Services. The Bureau of Labor Statistics projects that employment for Nurse Anesthetists will grow 31% by 2024. According to the most current American Association of Nurse Anesthetists (AANA) statistics, the mean total compensation for full time CRNAs is greater than $170,000.

Admissions

CRITERIA

- Degree of Bachelor of Science in Nursing from a nationally accredited nursing program.
- Students must meet the following minimum qualifications for admission consideration: must have a minimum WVU institutional GPA of a 3.0, a minimum cumulative GPA of a 3.0 from all college work ever attempted, and a minimum nursing GPA of a 3.0.
- Completion of 3 credits of undergraduate statistics equivalent to WVU Stats 211 and 3 credits of health assessment with a grade of C or better.
- GRE score within the past 5 years.
- Minimum of 1-year post-orientation, and preferably 2-3 years of current, full-time critical care experience.
- Certification in basic, advanced cardiac, and pediatric advanced life support.
- Current, unrestricted RN license. (Licensure in West Virginia will be required during the program and possibly one or more of the following states: Maryland, Ohio, and/or Pennsylvania.)
- Shadowing a CRNA prior to applying to the program is strongly recommended.
- Competitive applicants will be invited for an on-campus interview.

Note: Admission criteria are subject to change. Please see the School of Nursing website for the most up-to-date criteria at https://nursing.hsc.wvu.edu.
APPLICATION PROCESS

Complete two application forms as indicated below and return to the appropriate offices by the deadline.

1. Application for Admission to Graduate Studies (available at: https://app.applyyourself.com/AYApplicantLogin/fl_ApplicantConnectLogin.asp?id=wvugrad)
   - On the Supplemental Materials screen, you will upload the following:
     - Current curriculum vita or resume
     - Professional goals statement. View the guidelines on writing the essay on the School of Nursing website.
     - Applicants must also provide three letters of recommendation (Professor/Faculty Member, Supervisor/Employer responsible for your annual performance review, and a professional colleague, physician or CRNA). You will list your references, with their email addresses, on the Recommendations screen. Your references will receive an email from the application vendor with an electronic form. They will also need to upload a letter of recommendation.

2. Supplemental Application for the DNP Nurse Anesthesia Major (available at: https://nursing.hsc.wvu.edu/students/graduate-programs/dnp-nurse-anesthesia-major/)

3. Request an official transcript of records from each college or university attended. Transcripts should be sent directly to: WVU Office of Admissions, PO Box 6009, Morgantown, WV 26506-6009.

4. GRE scores within the past 5 years. WVU ETS Institution Code: 5904

Note: Any student who has been dismissed from the West Virginia University School of Nursing will not be readmitted to the program.

For more information, visit the website at https://nursing.hsc.wvu.edu, write to West Virginia University School of Nursing, P.O. Box 9600, Morgantown, WV 26506-9600; or call (304) 293-1386.

Degree Requirements

A minimum cumulative GPA of 3.0 is required for the degree.

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<th>Course Code</th>
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<td>Theoretical Foundations of Nursing Practice</td>
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<td>NSG 704</td>
<td>Health Care Leadership</td>
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<td>Advanced Lifespan Assessment: FNP Focus</td>
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<td>Evidence Based Practice Methods</td>
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<td>Health Care Issues, Policy, and Ethics</td>
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<td>Health Research Statistics 1</td>
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<td>Standards of Practice, Professionalism, and Overview of the Nurse Anesthesia Role</td>
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<td>Professional Issues in Nurse Anesthesia</td>
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<td>Genetics, Chemistry, and Physics of Anesthesia</td>
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<td>Foundations of Anesthesia 1: Basic Principles of Safe Anesthesia Care</td>
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<td>Foundations of Anesthesia 2: Regional Anesthesia and Considerations for Common Procedures</td>
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<td>Business, Management, and Finance in Nurse Anesthesia Practice</td>
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NSG 810  Nurse Anesthesia Clinical Immersion 1  3
NSG 812  Nurse Anesthesia Clinical Immersion 2  3
Project
  NSG 830  Nurse Anesthesia DNP Project  5
NSG 832  Nurse Anesthesia DNP Project Presentation  2
Total Hours 88

**Suggested Plan of Study**

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### Ninth Semester

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**Total credit hours: 88**

## Progression and Performance Standards

To progress in the graduate curriculum, a nurse anesthesia program student must meet the following performance standards. Failure to meet the criteria below will result in dismissal from the program.

1. Achieve and maintain an overall academic Grade Point Average of at least 3.0 in all work attempted in the Graduate Practice Program. A student who falls below 3.0 on nine or more credit hours will be placed on academic probation and has only one semester to bring up the GPA to the 3.0 requirement. Failure to raise the cumulative GPA to 3.0 in one semester will result in dismissal from the program.

2. Carry forward only one C grade in a core nursing course. A second C in a core nursing course will result in dismissal from the program. An exception for Nurse Anesthesia students: A student earning below a B- grade in any anesthesia specialty course or clinical practicum must repeat the course. This means the student will fall out of progression with the current cohort and must wait until the course is offered in the next academic year.

3. Repeat only one nursing course and only one time.

4. Earn a letter grade (A, B, C) on all required courses. A grade of F in any course results in dismissal from the program.

5. If a student needs to withdraw from all courses in a semester, the student must meet with his or her faculty and academic advisors to request a Leave of Absence if he/she plans to return to course work.

6. Students at all times are expected to demonstrate professionalism and respect for faculty, staff, preceptors, and student colleagues. If a student is dismissed from his or her clinical placement site for lack of professionalism, or if the student’s behavior compromises the school’s relationship with the agency, the student is subject to failure in the course and subject to dismissal from the program.

7. Any student who has been dismissed from the West Virginia University School of Nursing will not be readmitted to the program.

## Doctor of Nursing Practice in Nurse Anesthesia Learning Outcomes

Upon completion of the Nurse Anesthesia Major, the graduate will be prepared to:

At the completion of the WVU School of Nursing BSN to DNP Program, the graduate will be able to:

1. Use disciplined reasoning, science-based theories, and concepts from sciences and humanities to:
   a. Determine the nature and significance of health and health care delivery phenomena.
   b. Describe actions and advanced strategies to improve health care delivery, to diverse populations.
   c. Develop, deliver and evaluate theory based health care.
   d. Analyze nursing history to expand thinking and provide a sense of professional heritage and identity.

2. Demonstrate organizational and systems leadership that:
   a. Emphasizes clinical practice.
   b. Continually improves health outcomes.
   c. Ensures patient safety.

3. Use analytic methods, evidence, and nursing science to:
   a. Critically appraise existing literature to identify and evaluate best practices and practice guidelines.
   b. Facilitate the evaluation of systems of care in order to improve patient outcomes.
   c. Serve as a practice specialist/consultant in collaborative knowledge generating research.
   d. Disseminate results through translational scholarship.

4. Demonstrate proficiency and provide leadership for the integration of information systems/technology to:
a. Support, monitor, and improve patient care, healthcare systems, clinical decision-making, nurse-sensitive outcomes, and academic settings.
b. Support quality improvement and patient safety.
5. Assume a leadership role in advocacy and health care policy development.
6. Establish, participate in, and lead interprofessional collaborations for improving patient, population, and systems outcomes.
7. Develop, implement, and evaluate practice and healthcare delivery models for the purpose of quality improvement and improved patient outcomes considering:
   a. Safety and quality.
   b. Epidemiological, bio-statistical, environmental, and other appropriate scientific data.
   c. Culturally appropriate care.
   d. Values based professional practice and behaviors.
   e. Economies of care, business principles and health policy related to individual, aggregate and population health.
8. Ensure accountability for advanced practice based on refined assessment skills, advanced communication skills, biophysical, genetic, genomic, psychosocial, sociopolitical, economic, ethical, and cultural principles.
9. Practice and provide services for populations within the area of advanced nursing specialization.

Upon completion of the WVU Nurse Anesthesia Major, the graduate will be prepared to:

1. Implement advanced knowledge in nurse anesthesia science, theory, and practice.
2. Evaluate, develop, implement, and lead organizational change to improve care delivery and quality.
3. Develop evidence-based interventions and implement solutions to address clinical problems.
4. Examine and evaluate technology and the utility of information systems and data to improve patient care.
5. Influence and participate in health policy development in the institution and region of practice.
6. Collaborate with the healthcare community, working with nursing, medical, surgical and anesthesia team members to promote patient advocacy and safety.
7. Demonstrate technical, professional, and cultural competence in nurse anesthesia practice by safely caring for patients across the lifespan and at all levels of acuity.
9. Participate in the clinical, administrative, and educational advancement of fellow CRNAs and other advanced practice practitioners.

COURSES

NSG 501. Advanced Practice Role Seminar. 2 Hours.
PR: Senior status or enrolled in RN to BSN/MSN program. Exploration, analysis, and evaluation of the role of the advanced practice nurse as guided by concepts, theories, and research.

NSG 522. Culture and Health. 3 Hours.
Healthcare is encountering increasing cultural diversity. By identifying cultural behaviors, beliefs, and meaning of health in diverse cultural contexts, students will become more culturally proficient in delivering care.

NSG 593. Special Topics. 1-6 Hours.
A study of contemporary topics selected from recent developments in the field.

NSG 610. Leadership in Health Care. 3 Hours.
PR or CONC: NSG 622 and NSG 623. Critical analysis of leadership frameworks, values and beliefs, and application of skills in the practice setting.

NSG 611. System Based Decision Making. 2 Hours.
PR: NSG 616. Decision making grounded in an understanding of the organization as an open living system.

NSG 612. Leading Health System Change. 4 Hours.
PR: NSG 610 and NSG 611. Developing system-based change management critical to advanced nursing in various settings, including selection training, and support of effective teams and workgroups.

NSG 613. Managing Health Care Resources. 3 Hours.
PR: NSG 622 and NSG 623. Management of financial and human resources to promote professional practice and organizational growth within organizational financial constraints.

NSG 614. Health Care Informatics. 3 Hours.
PR: NSG 627. Explore technologies to improve health care practices and learn to utilize technology for outcomes management.

NSG 615. Program Planning/Evaluation. 3 Hours.
PR: NSG 613. Health care program planning, strategies for program implementation, and program evaluation techniques.

NSG 616. Role Seminar for Leadership MSN. 2 Hours.
Exploration, analysis, and evaluation of the role of the master’s prepared nurse in leadership positions as guided by concepts, theories, and research.
NSG 617. Leadership Practicum 1. 3 Hours.
Supervised practicum designed to apply healthcare leadership principles to practice. Students participate in nursing leadership and administrative activities in a selected healthcare setting.

NSG 618. Leadership Practicum 2. 3 Hours.
PR: NSG 617. Supervised practicum designed to build on initial application of healthcare leadership principles. Students participate in leadership and administrative activities in a selected health care setting.

NSG 622. Theory and Disciplined Reasoning. 3 Hours.
Introduction to the theoretical foundations of the discipline of nursing as a basis for applying critical thinking skills to the development of a conceptual framework for nursing.

NSG 623. Concepts of Advanced Nursing. 2 Hours.
PR or Conc: NSG 622. Exploration, analysis, and evaluation of concepts, theories, and research guiding the advanced practice of nursing. Learning activities emphasize advanced practice role.

NSG 626. Lifespan Health Promotion. 2 Hours.
An in-depth study of theoretical foundations, epidemiological principles, and advance practice strategies for the promotion of health and prevention of disease across the life-span.

NSG 627. Research and Systematic Analysis. 5 Hours.
PR: NSG 622. An overview of research methods, evidence and epidemiological and statistical measures used in advanced practice nursing.

NSG 628. Health Policy, Finance, Ethics. 3 Hours.
PR: NSG 622. Study of how health policy, the organization and financing of health care, and ethical principles shape professional practice.

NSG 629. Advanced Practice/Families. 2 Hours.
PR: NSG 622 and NSG 623 and NSG 626 and NSG 627. Exploration and analysis of family theories, assessments, and interventions applicable to the advanced practice of nursing.

NSG 654. Neonatal Pathophysiology. 4 Hours.
An introduction to the scientific foundations underlying processes contributing to health/illness states in neonates. Principles from genetics, embryology, and developmental physiology lay the foundation for subsequent courses in assessment, diagnosis and management.

NSG 655. Neonatal health Promotion. 2 Hours.
PR: NSG 622. Review of practices and services that contribute to healthy outcomes for sick and well neonates with focus on health promotion, disease prevention, and maintenance of function in the context of critical care and primary care.

NSG 656. Current Issues in Aging. 2 Hours.
An overview of contemporary gerontology that offers a multidisciplinary approach to providing services to older people in the United States.

NSG 657. Advanced Assessment of Older Adults. 2 Hours.
PR: NSG 624. Preparation for the conduct of advanced health assessment of older adults. Diagnostic reasoning is emphasized as the student collects and analyzes data obtained from the patient history, physical examination, and diagnostic procedures.

NSG 658. Geriatric Primary Care 1. 2.3 Hours.
PR: NSG 631 and NSG 657. Study of constellation of symptoms in the older adult that may be manifestations of other health problems.

NSG 659. Geriatric Primary Care 2. 4 Hours.
PR: NSG 657 and NSG 658. Study of common diseases and disorders seen in the older adult. An integration of advanced practice skills and role competencies in the care of older individuals and their families is emphasized.

NSG 660. Women's Reproductive Health. 2 Hours.
PR: Graduate status or permission. This course focuses on fertility control, reproductive health, menopause, and health promotion activities for women.

NSG 663. Neonatal Assessment/Care 1. 5 Hours.
PR: NSG 622 and NSG 623 and NSG 654 and PR or CONC: NSG 655. Preparation for conducting advanced assessment of neonates/young infants. Diagnostic reasoning is emphasized through collecting and analyzing data obtained from patient history, physical examination, and diagnostic procedures.

NSG 664. Neonatal Care 2. 4 Hours.
PR: NSG 663 and NSG 631. This course focuses on the management of common problems and conditions in neonates.

NSG 665. Neonatal Practicum 1. 5 Hours.
PR: NSG 631 and PR or CONC: NSG 664. This supervised practicum is designed to facilitate the student's competency in the delivery of care to infant populations.

NSG 666. Neonatal Practicum 2. 5 Hours.
PR: NSG 665. This supervised practicum is designed to facilitate the student's competency in the delivery of care to infant populations.

NSG 670. Curriculum in Nursing. 3 Hours.
A review of contemporary theory-based determinants of curriculum development in nursing, including analysis and evaluation of curricula for nursing education.
NSG 671. Clinical Practicum-Educators. 2 Hours.
PR: NSG 635. Implementation of theory-based advanced nursing practice in an area of student's clinical interest/expertise. Student develops the advanced practice role with a select population of clients and families.

NSG 672. Education Practicum. 3 Hours.
PR: NSG 674. Guided teaching experience under the supervision of an experienced faculty member that allows the student to function in the role of nurse educator in classroom and clinical settings.

NSG 674. Teaching in Nursing. 3 Hours.
PR: NSG 670. A general methods course involving the principles of instruction in didactic and clinical nursing education including analysis of course planning, teaching methods, and evaluation of student outcomes.

NSG 675. Geriatric Practicum 1. 2-5 Hours.

NSG 676. Geriatric Practicum 2. 4-5 Hours.
PR: NSG 675. Supervised practicum that focuses on evidence-based advanced practice in a variety of settings. The students, with supervision, will manage health care of geriatric clients and their families and participate on interdisciplinary teams.

NSG 683. Primary Care: Women and Girls 1. 3 Hours.
PR: NSG 622, NSG 623, NSG 624, NSG 626, NSG 631 and NSG 632. Introduction to the domains and competencies of the advanced practice nursing role that are fundamental to primary health care of women and girls.

NSG 684. Primary Care: Women and Girls 2. 4 Hours.
PR: NSG 683. Further development of the domains and competencies of the advanced practice nursing role introduced in NSG 683 that are fundamental to primary health care of the rural family unit.

NSG 685. Clinical Scholarship. 1 Hour.
Co-Req: NSG 635 (For FNP track) or NSG 645 (For PNP track). Knowledge dissemination within the advanced practice role using disciplined reasoning and systematic inquiry to examine and incorporate evidence-based strategies in the caring/healing process.

NSG 686. WHNP Practicum 1. 2-5 Hours.
PR or CONC: NSG 684. Supervised practicum designed to apply theory- and evidence-based advanced practice nursing. Students develop the advanced practice role as they manage health care and participate in service learning.

NSG 687. WHNP Practicum 2. 4-5 Hours.

NSG 691. Advanced Topics. 1-6 Hours.
PR: Consent. Investigation of advanced topics not covered in regularly scheduled courses.

NSG 693. Special Topics. 1-6 Hours.
A study of contemporary topics selected from recent developments in the field.

NSG 695. Independent Study. 1-6 Hours.
Faculty supervised study of topics not available through regular course offerings.

NSG 697. Research. 1-15 Hours.
PR: Consent. Research activities leading to thesis, problem report, research paper, or equivalent scholarly project, or a dissertation guided by a student-graduate faculty contact based on the course objectives and culminating in a written product. (Grading will be S/U.).

NSG 701. Advanced Pharmacotherapeutics. 3 Hours.
PR: NSG 706. Examination of the relationship between pharmacologic principles and the selection of pharmacologic agents in altered health states across the lifespan. This course lays the foundation of subsequent courses in diagnosis, management, and therapeutic interventions.

NSG 702. Population Health Promotion. 3 Hours.
In-depth study and analysis of clinical prevention and population health for individuals, aggregates, and populations utilizing advanced nursing practice strategies for the promotion of health and prevention of disease across the lifespan.

NSG 703. Theoretical Foundations of Nursing Practice. 3 Hours.
Elaboration and integration of theories from nursing, the sciences, and the humanities to build a foundation for the highest level of nursing practice.

NSG 704. Health Care Leadership. 3 Hours.
Critical analysis of leadership in an organizational setting, with development of skills needed to enact the leadership role.

NSG 705. Advanced Lifespan Assessment: FNP Focus. 3 Hours.
PR: NSG 706. The focus of this course is the advanced health assessment of individuals across the lifespan. Skilled interviewing and clinical reasoning are emphasized as students collect and analyze data from the patient history, physical examination, and diagnostic procedures.
NSG 706. Advanced Pathophysiology. 3 Hours.
Theoretical basis of pathophysiological changes in acute and chronic illnesses confronted in primary care across the lifespan is presented. The course serves as the foundation for clinical assessment, decision making, and management.

NSG 707. Evidence Based Practice Methods. 3 Hours.
PR: NSG 724. This course provides an overview of research methods, evidence, and epidemiologic measures for understanding the translation of research into practice and the design of interventions to promote change in a variety of settings.

NSG 708. Role Seminar for Advanced Practice. 2 Hours.
Exploration, analysis, and evaluation of the role of the advanced practice nurse as guided by concepts, theories, and research.

NSG 709. Health Care Informatics. 3 Hours.
Explore information technologies used in acute and outpatient health settings and describe methods of utilization of technology for practice improvement and patient outcomes management.

NSG 710. Health Care Issues, Policy, and Ethics. 3 Hours.
A foundation for leadership in health policy development, implementation, and evaluation, with a focus on advocacy for nursing, leadership, ethics, finance, and policy/program implementation.

NSG 711. Health Care Focus. 3 Hours.
Provides for the development of knowledge and skills relative to the state of the science in a particular area of clinical practice.

NSG 712. Primary Care of Families 1. 3 Hours.
PR: NSG 701 and NSG 702 and NSG 705 and NSG 707 and NSG 708. An introduction to the knowledge and skills basic to the health maintenance, diagnosis, treatment, evaluation, and revision of care of individuals as members of family units in the primary care setting.

NSG 713. Doctor of Nursing Practice Role Application. 1 Hour.
PR or CONC: NSG 742. Integration of Doctor of Nursing practice role competencies at the highest level of nursing practice.

NSG 714. Primary Care of Families 2. 3 Hours.
PR: NSG 712. Further acquisition of knowledge and skills basic to the health maintenance, diagnosis, treatment, evaluation, and revision of care of individuals as members of family units in the primary care setting. The change in course hours reflects change in content.

NSG 717. Organization and Leadership. 3 Hours.
Provides a foundation for developing organizational and systems leadership skills critical to clinical care and health outcomes. Knowledge will help students to promote patient safety and excellence in health care organizations.

NSG 719. Health Care Policy. 3 Hours.
Provides a foundation for influencing, developing, implementing, and evaluating health care policies and legislation pertinent to issues in health care such as ethics, safety, costs, access, and quality.

NSG 720. Family Practicum 1. 5 Hours.
PR: NSG 712 and NSG 714. Supervised practicum designed to facilitate the student's competency at the advanced practice level in the delivery of primary health care across the lifespan.

NSG 721. Family Practicum 2. 5 Hours.
PR: NSG 720. Supervised practicum that builds upon Family Practicum 1 and applies theory and evidence to the advanced practice of nursing. Further role and competency development at the advanced practice level of lifespan primary health care.

NSG 722. Topics in Global Health: Honduras. 2 Hours.
PR or CONC: NSG 721. Students are introduced to global health concepts through immersion in the culture of Honduras and utilize disciplined reasoning in the application of therapeutics and evidence-based advanced nursing practice in service learning experiences.

NSG 724. Health Research Statistics 1. 3 Hours.
This course provides development of statistical knowledge and skills needed for quantitative health research. Topics include descriptive statistics, probability, hypothesis testing, analysis of variance, chi square and regression techniques.

NSG 725. Health Research Statistics 2. 3 Hours.
This course continues the development of statistical knowledge and skills needed for quantitative health research using SPSS, including nonparametric testing, advanced regression topics and diagnostics, ANCOVA, SPSS syntax, classification, and factor, survival and power analyses.

NSG 727. Contemporary Nursing Science. 3 Hours.
PR: NSG 728 and PR or CONC: NSG 729. Focus is on an analysis of the state of the science for a phenomenon for study. Emphasis is placed on the application of the particular phenomenon to a population of interest.

NSG 728. Nursing Science Theory/Philosophy. 4 Hours.
This course builds on philosophical basis of nursing. Discovery and verification of scientific knowledge are addressed by focusing on theory development. Methodologies include concept analysis and evaluation of middle-range theories of nursing and related sciences.

NSG 729. Quantitative Methods. 3 Hours.
PR: (NSG 724 and NSG 725) with a minimum grade of B-. Quantitative methods and measurement relevant to conducting research in nursing are studied.
NSG 730. Principles of Measurement. 3 Hours.
PR: NSG 727 and NSG 728. The role of measurement in nursing research is studied. Measurement in the areas of attitudes, personality, competence, development, and group qualities is emphasized. Instrument development and reliability/validity issues are also discussed.

NSG 731. Qualitative Research Methods. 3 Hours.
PR: NSG 728. An exploration of the philosophical foundation and methods of qualitative inquiry. Research designs, ethical issues, rigor, integrity, data collection, interpretation, and representation are studied in depth.

NSG 732. Seminar in Nursing Scholarship. 2 Hours.
PR: Admission to the PhD program. Exploration of the dimensions of scholarship in preparation for future roles as nurse scholars/scientists.

NSG 733. Research Grant Development. 2 Hours.
PR: NSG 781. Analysis of the grant-writing process, including current federal application formats, provides students with the background to complete a submittable grant proposal in their own area of research.

NSG 734. Use of Data. 3 Hours.
PR: NSG 729. This course focuses on use of the following data bases: clinical, financial, health services, nursing, local, state, and national. The uses of existing data in clinical and policy decisions and in research will be explored.

NSG 735. Principles: Nursing Education. 3 Hours.
This course examines the research base of educational strategies in nursing education in classroom and clinical settings. The course also examines external determinants on nursing curriculum, accreditation issues, and evaluation of nursing programs.

NSG 736. Advanced Health Policy and Ethics. 3 Hours.
PR: NSG 704, NSG 724, NSG 725, NSG 728, NSG 732, and NSG 735. Examination of ethical issues of research and current health policy.

NSG 737. Leadership. 3 Hours.
PR: NSG 734. Through exploration of contemporary leadership theory and application to self, an authentic personal leadership style will be developed to enable the student to enact a leadership role in health care and/or education.

NSG 738. Issues in Nursing Scholarship. 3 Hours.
PR: NSG 729, NSG 731, and NSG 737. Seminar focused on broad issues of ethics in the conduct of research and role acquisition of nurse scientist in academic, clinical, and health policy settings.

NSG 740A. Standards of Practice, Professionalism, and Overview of the Nurse Anesthesia Role. 2 Hours.
This course provides information and perspectives on the Doctor of Nursing Practice (DNP) Essentials, history of the nurse anesthesia profession, professional roles, wellness and the effects of substance use disorder, curricular standards, scope of practice, and regulatory authorities pertinent to nurse anesthetists.

NSG 740B. Professional Issues in Nurse Anesthesia. 2 Hours.
PR: NSG 740A with a minimum grade of B-. This course builds upon themes related to the role of the nurse anesthetist, which were presented in NSG 740A. Topics include safety, professional interactions, added value of a nurse anesthetist in a variety of arenas, legal issues, and future trends as related to the role of the CRNA.

NSG 741. Genetics, Chemistry, and Physics of Anesthesia. 3 Hours.
PR: NSG 706 with a minimum grade of C-. The student will examine science-based principles of genetics, chemistry, and physics that relate to the mechanisms and effects of anesthesia. Mathematics concepts such as converting systems of measurement and calculating drug infusion rates will be explored. Components and functions of the anesthesia gas machine will be introduced.

NSG 742A. Foundations of Anesthesia 1: Basic Principles of Safe Anesthesia Care. 3 Hours.
PR: NSG 741 and PR or CONC: NSG 743 and NSG 752A with a minimum grade of B- in each. Core anesthesia principles of preoperative assessment, monitoring, positioning, basic airway and fluid management, and administration and documentation of basic and safe anesthetics for adults are discussed in this course. Students will have the knowledge to prepare for workshops associated with NSG 743 and for clinical practicum, NSG 752A.

NSG 742B. Foundations of Anesthesia 2: Regional Anesthesia and Considerations for Common Procedures. 2 Hours.
PR: NSG 742A with a minimum grade of B-. This course addresses basic anesthesia principles for safe administration of regional anesthesia. Students are introduced to anesthesia considerations for patients across the lifespan, including pediatric and geriatric patients, and will examine management fundamentals for common surgical subspecialty procedures.

NSG 743. Foundations of Anesthesia Lab. 1 Hour.
PR or CONC: NSG 742A and NSG 752A with a minimum grade of B- in each. This course develops the necessary psychomotor and critical thinking skills to provide safe anesthesia care in clinical settings. Workshops include conducting a preanesthetic assessment, preparing the anesthesia workspace and gas machine, managing the airway, obtaining vascular access, monitoring, positioning, preparing anesthetic medications, and managing complications that arise during anesthetic inductions.

NSG 744A. Advanced Anatomy, Physiology, and Pathophysiology 1: Cardiac, Pulmonary, and CNS. 3 Hours.
PR: NSG 742A with a minimum grade of B-. The focus of this course is to address advanced concepts in anatomy, physiology, and pathophysiology, incorporating the effects of anesthesia, and discussing management principles for disorders associated with the cardiovascular, pulmonary, and central nervous systems.
NSG 744B. Advanced Anatomy, Physiology, and Pathophysiology 2: Hepatic, Renal, and Related Systems. 2 Hours.
NSG 744B. Advanced Anatomy, Physiology, and Pathophysiology 2: Hepatic, Renal, and Related Systems. 2 Hr PR: NSG 744A with a minimum grade of B-. The focus of this course is to continue addressing advanced concepts presented in NSG 744A. Anatomy, physiology, and pathophysiology are presented, incorporating the effects of anesthesia, and discussing management principles for disorders associated with the hepatic, renal, endocrine, gastrointestinal, immune and related systems.

NSG 745. Clinical Immersion. 1-8 Hours.
PR: NSG 711. Provides for the mastery of clinical skills relative to the state of the science in a particular area of clinical practice.

NSG 746. Advanced Pharmacology for Nurse Anesthetists. 3 Hours.
PR: NSG 701 with a minimum grade of C- and NSG 742A with a minimum grade of B-. This course applies principles of pharmacology to anesthesia practice. Pharmacologic properties of anesthetic agents and common adjunctive drugs are discussed to enable the student to develop advanced plans for anesthetic management.

NSG 747. Perioperative Assessment and Care. 1 Hour.
PR: NSG 705 with a minimum grade of C- and NSG 742B with a minimum grade of B-. Students in this lab course apply principles of advanced assessment to nurse anesthesia practice. Comprehensive health history, in-depth physical exam techniques, and evidence-based diagnostic skills are expanded to emphasize critical thinking and decision-making in the perioperative environment. Students will demonstrate use of advanced airway devices and ultrasound to improve patient care.

NSG 748A. Advanced Principles of Anesthesia 1: Cardiothoracic, Vascular, and Neuroanesthesia. 3 Hours.
PR: NSG 742B and NSG 744A with a minimum grade of B- in each. Advanced principles of anesthesia management for cardiac, thoracic, vascular, and neurosurgical procedures are presented in this course. Students examine techniques to administer anesthesia to patients undergoing procedures including coronary bypass grafting, lung resections, endovascular aortic repairs, and intracranial tumor resections.

NSG 748B. Advanced Principles of Anesthesia 2: Management Across the Lifespan. 3 Hours.
PR: NSG 748A with a minimum grade of B-. Advanced principles of anesthesia including obstetric and pediatric specialties are presented. Students examine anatomy, physiology, pathophysiology, and anesthetic management unique to the obstetric and pediatric populations. Simulations of induction and management for pediatric patients, aged from neonate to 18 years, and all levels of acuity will be conducted to reinforce didactic concepts.

NSG 748C. Advanced Principles of Anesthesia 3: Management of Special Populations. 2 Hours.
PR: NSG 748B with a minimum grade of B-. Advanced principles of anesthetic management including patients of trauma, abdominal transplant, burns, and pain management populations are presented in this course. Students will examine and apply techniques of difficult airway management, blood volume resuscitation, hemodynamic control, and acute and chronic pain management in this course.

NSG 749. Business, Management, and Finance in Nurse Anesthesia Practice. 3 Hours.
PR: NSG 704 with a minimum grade of C- and NSG 740B with a minimum grade of B-. Principles of business, management, and finance are applied to nurse anesthesia in this course. Students will analyze reimbursement and billing models, develop plans for business, and evaluate contracts for independent and hospital employment. Management relationships with staff, human resources, and other departments in a health organization will be evaluated. Health care and personal finance will be discussed.

NSG 751. Evidence-Based Anesthesia Review. 3 Hours.
PR: NSG 749 and NSG 810 with a minimum grade of B- in each. An evidence-based update and review of the body of knowledge necessary to enter nurse anesthesia practice is the focus of this course. Students will revisit basic sciences, basic and advanced principles of anesthesia, pharmacology, and age and procedure-related management concepts. Students will write a summative Comprehensive Exam and participate in an objective structured clinical exam based on the entire curriculum.

NSG 752A. Foundations Clinical Practicum 1. 1 Hour.
PR or CONC: NSG 742A and NSG 743 with a minimum grade of B- in each. This initial clinical practicum course is designed to integrate basic anesthetic principles into practice. The student will be introduced to anesthesia monitoring, procedures, technology, equipment, medications, and the perioperative clinical environment.

NSG 752B. Foundations Clinical Practicum 2. 2 Hours.
PR: NSG 752A and PR or CONC: NSG 742B with a minimum grade of B- in each. This second clinical practicum course is designed to increase the integration of basic anesthesia principles into clinical practice. The student will continue to develop skill with anesthesia monitoring, use of equipment, administration of medications, and gain greater experience in anesthesia management of uncomplicated surgical procedures and regional anesthesia in the perioperative clinical environment.

NSG 753A. Advanced Clinical Practicum 1. 2 Hours.
PR: NSG 752B and PR or CONC: NSG 748A with a minimum grade of B- in each. This third clinical practicum integrates advanced anesthesia principles into clinical practice. The student will continue to develop competency with monitoring, use of equipment, administration of medications, and gain experience in anesthesia management including obstetric and pediatric patients.

NSG 753B. Advanced Clinical Practicum 2. 2 Hours.
PR: NSG 753A and PR or CONC: NSG 748B with a minimum grade of B- in each. This fourth clinical practicum continues the integration of advanced anesthesia principles into practice. The student will continue to develop competency with monitoring, use of equipment, administration of medications, and gain experience in anesthesia management including obstetric and pediatric patients.
NSG 753C. Advanced Clinical Practicum 3. 2 Hours.
PR: NSG 753B and PR or CONC: NSG 748C with a minimum grade of B- in each. This fifth clinical practicum is designed to integrate advanced anesthesia principles with preparation for clinical immersion. The student will continue to manage general and specialty anesthetic techniques for patients with complex comorbidities and broaden experience in care of special populations.

NSG 760. DNP Project Proposal. 3 Hours.
PR: NSG 721 or NSG 773. Develop a scholarly initiative to improve practice system, or patient outcomes.

NSG 761. Clinical Project 1. 1 Hour.
PR: NSG 715 and NSG 716. Identifies a practice problem and connects the problem to existing knowledge and science.

NSG 762. Clinical Project 2. 1 Hour.
PR: NSG 761 and NSG 717 and NSG 718. Students design an initiative to address the practice problem identified in NSG 761 using the appropriate research methods and a variety of scientific principles.

NSG 763. DNP Project. 1-6 Hours.
PR or CONC: NSG 760. Implementation of a capstone project using leadership skills to create and evaluate change relative to a practice problem. Analysis of the relationship of the project to practice and policy.

NSG 767. Advanced Lifespan Assessment: PNP Focus. 3 Hours.
PR: NSG 706. Advanced health assessment of individuals across the lifespan with focus on pediatric populations. Skilled interviewing and clinical reasoning are emphasized as students collect and analyze data from the patient history, physical examination and diagnostic procedures.

NSG 768. Prospectus Development. 1-6 Hours.
Supervised experiences in planning the dissertation research project, developing the chapters for the prospectus, and preparing the proposal document for review by committee members.

NSG 769. Faculty Career Development. 1 Hour.
Supervised experiences in searching for available positions, preparing and submitting application materials, participating in campus interviews, and planning a successful future career.

NSG 770. Pediatric Primary Care 1. 3 Hours.
PR: NSG 701 and NSG 702 and NSG 705 and NSG 707 and NSG 708. An introduction to the knowledge and skills basic to the health maintenance, diagnosis, treatment, evaluation and revision of care of children in the primary care setting.

NSG 771. Pediatric Primary Care 2. 3 Hours.
PR: NSG 770. Further acquisition of knowledge and skills central to the assessment of health status, diagnosis, treatment and evaluation of children in the primary care setting.

NSG 772. Pediatric Practicum 1. 5 Hours.
PR or CONC: NSG 771. Supervised practicum designed to facilitate the student's competency in the delivery of primary health care to children.

NSG 773. Pediatric Practicum 2. 5 Hours.
PR: NSG 772. Supervised practicum that builds on NSG 772 [Pediatric Practicum 1] and applies theory and evidence to the advanced practice of nursing. Further role and competency development at the advanced practice level for the delivery of primary health care to pediatric populations.

NSG 781. Research Mentorship. 1-3 Hours.
PR: NSG 729 and NSG 731. In this guided practicum, the student's research skills are developed and cultivated through participation in the mentorship process with an experienced researcher (the chairperson or his/her designee).

NSG 783. Dissertation Seminar. 1 Hour.
PR: NSG 729 and NSG 731. This seminar provides an opportunity for continued knowledge synthesis related to the selected topic of research. Students will participate in proposal presentation and critique. The expectation is a National Research Service Award Predoctoral Fellowship Application.

NSG 791. Advanced Topics. 1-6 Hours.
PR: Consent. Investigation of advanced topics not covered in regularly scheduled courses.

NSG 792. Directed Study. 1-6 Hours.
Directed study, reading, and/or research.

NSG 793. Special Topics. 1-6 Hours.
A study of contemporary topics selected from recent developments in the field.

NSG 794. Seminar. 1-6 Hours.
Special seminars arranged for advanced graduate students.

NSG 795. Independent Study. 1-9 Hours.
Faculty supervised study of topics not available through regular course offerings.

NSG 796. Graduate Seminar. 1 Hour.
PR: Consent. Each graduate student will present at least one seminar to the assembled faculty and graduate student body of his or her program.
NSG 797. Research. 1-15 Hours.
PR: Consent. Research activities leading to thesis, problem report, research paper, or equivalent scholarly project, or a dissertation. (Grading will be S/U).

NSG 798. Thesis or Dissertation. 1-6 Hours.
PR: Consent. This is an optional course for programs that wish to provide formal supervision during the writing of student reports (698), or dissertations (798). Grading is normal.

NSG 799. Graduate Colloquium. 1-6 Hours.
PR: Consent. For graduate students not seeking coursework credit but who wish to meet residency requirements, use the University's facilities, and participate in its academic and cultural programs. Note: Graduate students who are not actively involved in coursework or research are entitled, through enrollment in the department's 699/799 Graduate Colloquium to consult with graduate faculty, participate in both formal and informal academic activities sponsored by their program, and retain all of the rights and privileges of duly enrolled students. Grading is P/F; colloquium credit may not be counted against credit requirements for masters programs. Registration for one credit of 699/799 graduate colloquium satisfies the University requirement of registration in the semester in which graduation occurs.

NSG 810. Nurse Anesthesia Clinical Immersion 1. 3 Hours.
PR: NSG 753C with a minimum grade of B-. This sixth clinical practicum is designed to immerse the student in advanced professional practice as a nurse anesthetist. Students develop clinical leadership skills in experiences ranging from a team-oriented academic trauma center to a community hospital with nurse anesthetists in independent practice.

NSG 812. Nurse Anesthesia Clinical Immersion 2. 3 Hours.
PR: NSG 810 with a minimum grade of B-. This seventh clinical practicum is designed to conclude the student’s clinical immersion and marks the transition from student to advanced professional practice as a nurse anesthetist. Clinical experiences range from team-oriented, academic trauma centers to community hospitals with independent CRNA practitioners.

NSG 830. Nurse Anesthesia DNP Project. 1-2 Hours.
PR: NSG 724. This course provides the student nurse anesthetist with a framework for developing, implementing, and evaluating the outcomes of a Doctor of Nursing Practice (DNP) project.

NSG 832. Nurse Anesthesia DNP Project Presentation. 2 Hours.
PR: NSG 707 and NSG 830. This course requires the student nurse anesthetist to present the Doctor of Nursing Practice (DNP) project. The student will demonstrate mastery of the DNP Essentials, BSN-DNP program outcomes, and Nurse Anesthesia major outcomes through a portfolio, a presentation of the project, a manuscript prepared for publication, and critique of other students' scholarly work.