ADDENDUMA
TO THE NATIONAL UNIVERSITY GENERAL CATALOG 83

Effective Date September 28, 2020

National University Academic Headquarters
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TECHNOLOGY FEES

The following courses utilize a third-party technology. Accessing the third-party technology is a required component of your course. The technology fee will be applied to the student's account at the time tuition is applied.

MUS 327……………………………………………$59.50
CSC 208……………………………………………$70.00
CSC 310……………………………………….……$49.00
CSC 331……………………………………….……$49.00
CSC335………………………………………….……$49.00
CSC 445……………………………………….……$49.00

ACADEMIC PROGRAM UPDATES

COLLEGE OF LETTERS AND SCIENCES

BACHELOR OF SCIENCE BIOLOGY
Program Lead: Michael Maxwell; (858) 642-8413; mmaxwell@nu.edu

The Bachelor of Science in Biology offers personal and academic fulfillment and growth as students discover the amazing world of biology. This degree prepares students for graduate and professional study, careers in life science education, research, health sciences, and applied biology. The BS Biology provides a solid foundation in all levels of biological organization, from molecules to ecosystems. Such a comprehensive curriculum is crucial to meeting modern challenges in science, which include new and emerging diseases, rapid advances in our understanding of genetics, physiology and biodiversity, threats to species and ecosystem functioning, and global population increase and sustainability. A degree in biology is common preparation for careers in the various medical professions, genetics, molecular and cell biology, biotechnology, microbiology, conservation biology, evolutionary biology, ecology, animal and plant science, as well as science writing, editing and education.

Students who wish to include an interdisciplinary approach to their academic training should look closely at the benefits provided by this major. In addition to meeting requirements for BS Biology, this degree allows for the integration of study in the life sciences with coursework in the physical and earth sciences, as well as applied fields such as forensics. Furthermore, in keeping with the commitment of the College of Letters and Sciences to the complete academic development of its students, science courses involve writing and diversity components, as well as fundamental critical thinking components.

Bachelor of Science in Biology to Master of Forensic Science Transition Program

The BS Biology to MFS transition program allows students who are enrolled in the BS Biology with a cumulative grade point average of at least 3.0 and who are within completing their last six courses to register for two courses in the MFS program as electives for the bachelor's degree. The two graduate courses are restricted to those that do not require a prerequisite. Students must complete all transition program coursework with a grade of B or better. The number of courses required to earn an MFS degree for transition program students is reduced from 12 to as few as 10 courses. Graduate-level coursework taken as part of the Biology program cannot be applied as graduate credit to the Master of Forensic Science program, nor will it transfer as graduate level credit to any other university because it becomes part of the undergraduate degree program. Students must enroll in and complete the first class in the master's degree within 6 months of the conferral date of their undergraduate degree. The MFS program must be completed within 4 years with no break in enrollment of 12 months or more. Further rules and requirements for Transition programs are located in the university catalog.

Program Learning Outcomes
Upon successful completion of this program, students will be able to:
*   Discuss biological processes at all of levels of organization: molecular, cellular and microbial, organismal, population, and ecosystem.
*   Explain the importance of unifying concepts in biology, including cell theory, genetics, and evolution.
*   Describe the structure and function of Earth's organisms, as well as their roles in the natural world.
*   Apply the scientific method in laboratory-based and field-based inquiry.
*   Demonstrate effective oral, visual, and written communication and quantitative skills, including the critical analysis of data and scientific literature.
*   Demonstrate computer and technology literacy, including the ability to access databases within the context of course research and project development.
*   Evaluate historical developments and research in biology, as well as current and contemporary research and challenges.

Degree Requirements
To receive a Bachelor of Science, Major in Biology, students must complete at least 180 quarter units as articulated below, 45 of which must be completed in residence at National University, 76.5 of which must be completed at the upper division level, and a minimum 70.5 units of the University General Education requirements. In the absence of transfer credit, additional general electives may be necessary to satisfy total units for the degree. Refer to the section on undergraduate admission requirements for specific

information regarding admission and evaluation. All students receiving an undergraduate degree in Nevada are required by State Law to complete a course in Nevada Constitution.

* Completion of BIO 100, 100A, 201, 201A, 202, 202A, 203, 203A is equivalent to the course sequence BIO 161, 162, 163, 169A for fulfillment of the BS Biology degree.

Preparation for the Major
(16-17 courses; 60-61.5 quarter units)

MTH 210 *   Probability and Statistics
Prerequisite: Accuplacer test placement evaluation or MTH 12A and MTH 12B

MTH 215 *   College Algebra & Trigonometry
Prerequisite: Accuplacer test placement evaluation or MTH 12A and MTH 12B
or
MTH 216A *   College Algebra I (3 quarter units)
Prerequisite: Accuplacer test placement evaluation MTH 12A and MTH 12B
and
MTH 216B *   College Algebra II (3 quarter units)
Prerequisite: MTH 216A

CHE 141 *   General Chemistry 1
Prerequisite: MTH 215 or equivalent

CHE 142 *   General Chemistry 2
Prerequisite: CHE 141

CHE 143 *   General Chemistry 3
Corequisite: CHE 149A
Prerequisite: CHE 142

BIO 161 *   General Biology 1

BIO 162 *   General Biology 2
Prerequisite: BIO 161

BIO 163 *   General Biology 3
Corequisite: BIO 169A
Prerequisite: BIO 161 and BIO 162

PHS 171 *   General Physics 1
Prerequisite: MTH 215 or MTH 216A and MTH 216B

PHS 172 *   General Physics 2
Prerequisite: PHS 171

PHS 173 *   General Physics 3
Corequisite: PHS 179A
Prerequisite: PHS 171 and PHS 172

CHE 150   Introductory Organic Chemistry
Prerequisite: CHE 101 and CHE 101A or CHE 141, CHE 142, CHE 143 and CHE 149A

CHE 150A   Introductory Organic Chem Lab
(1.5 quarter units)
Corequisite: CHE 150

BIO 169A   General Biology Lab (1.5 quarter units)
Corequisite: BIO 163
Prerequisite: BIO 161 and BIO 162

CHE 149A   General Chemistry Laboratory
(1.5 quarter units)
Corequisite: CHE 143

PHS 179A   General Physics Lab (1.5 quarter units)
Prerequisite: PHS 171, PHS 172 and PHS 173

* May be used to meet General Education requirements

Requirements for the Major
(12 courses; 42 quarter units)

BIO 330   Ecology
Prerequisite: BIO 161, BIO 162, BIO 163, CHE 141, CHE 142, CHE 143, BIO 169A and CHE 149A

BIO 305   Genetics
Prerequisite: BIO 163, CHE 143, BIO 169A and CHE 149A

BIO 310   Evolution
Prerequisite: BIO 161, BIO 162, BIO 163 and BIO 169A

BIO 406   Cellular Biology
Corequisite: BIO 406A
Prerequisite: BIO 161, BIO 162, BIO 163, CHE 141, CHE 142, CHE 143, BIO 169A and CHE 149A

BIO 406A   Cellular Biology Lab (1.5 quarter units)
Corequisite: BIO 406
Prerequisite: BIO 161, BIO 162, BIO 163, CHE 141, CHE 142, CHE 143, BIO 169A and CHE 149A

BIO 407   Molecular Biology
Corequisite: BIO 407A
Prerequisite: BIO 161, BIO 162, BIO 163, CHE 141, CHE 142, CHE 143, BIO 169A, CHE 149A and BIO 305

BIO 407A   Molecular Biology Lab (1.5 quarter units)
Corequisite: BIO 407
Prerequisite: BIO 161, BIO 162, BIO 163, CHE 141, CHE 142, CHE 143, BIO 169A, CHE 149A and BIO 305

BIO 414   Invertebrate Zoology
Corequisite: BIO 414A
Prerequisite: BIO 161, BIO 162, BIO 163, CHE 141, CHE 142, CHE 143, BIO 169A and CHE 149A

BIO 414A   Invertebrate Zoology Lab (1.5 quarter units)
Corequisite: BIO 414

BIO 416   Vertebrate Zoology
Corequisite: BIO 416A
Prerequisite: BIO 161, BIO 162, BIO 163, CHE 141, CHE 142, CHE 143, BIO 169A and CHE 149A

BIO 416A   Vertebrate Zoology Laboratory
(1.5 quarter units)
Corequisite: BIO 416

BIO 485   Contemporary Topics in Biology
Prerequisite: BIO 305 or BIO 310 or BIO 330

Upper-Division Electives
(7 courses; 31.5 quarter units)

Students may select only 300, 400, or 500 level in the College of Letters and Sciences to complete the total of 76.5 quarter units of upper division for the degree. Suggested upper-division courses are given below.

BIO 420   Animal Behavior
Prerequisite: BIO 161, BIO 162, BIO 163 and BIO 100A

BIO 430   Immunology
Recommended Preparation: BIO 203 or BIO 406 or equivalent courses.

BIO 440   Botany

	Prerequisite: BIO 161, BIO 162, BIO 163, CHE 141, CHE 142, CHE 143, BIO 169A and CHE 149A	
BIO 450	Natural History of California	
	Prerequisite: BIO 161, BIO 162, BIO 163 and BIO 100A or BIO 100 and BIO 100A	
BIO 460	Marine Biology	
	Prerequisite: BIO 161 with a minimum grade of C, BIO 162 with a minimum grade of C and BIO 163 with a minimum grade of C	
BIO 461 **	Marine Biology Field Studies	
	Recommended Preparation: BIO 162 with a minimum grade of C	
BIO 470	Bioinformatics	
	Corequisite: BIO 470A	
	Prerequisite: BIO 161 with a minimum grade of C-, BIO 162 with a minimum grade of C- and BIO 163 with a minimum grade of C-	
BIO 470A	Bioinformatics Lab (1.5 quarter units)	
	Corequisite: BIO 470	
BIO 480	Studies in Biology	
CHE 350	Organic Chemistry I	
	Prerequisite: CHE 142	
CHE 350A	Organic Chemistry I Lab (1.5 quarter units)	
	Corequisite: CHE 350	
CHE 351	Organic Chemistry II	
	Prerequisite: CHE 350	
CHE 351A	Organic Chemistry II Lab (1.5 quarter units)	
	Corequisite: CHE 351	
CHE 360	Biochemistry I	
	Prerequisite: CHE 350, CHE 350A and CHE 351	
CHE 361	Biochemistry II	
	Prerequisite: CHE 360	
EES 322	Oceanography	
EES 335	Environmental Science	
MTH 317	Mathematical Modeling	
	Prerequisite: MTH 215 or MTH 216A and MTH 216B and MTH 210	
SCI 303	GIS: Geographic Info Systems	
SCI 400	History of Science	
	Prerequisite: One 4.5 quarter unit science course from the natural sciences.	
SCI 490	Guided Study (variable units)	

** Enrollment in this course requires Instructors permission

Approved transition program students may select up to two FSC courses from below to meet up to 9 quarter units of the elective requirement.

FSC 630	Forensic Pathology I
FSC 633	Advanced Forensic Toxicology
FSC 634	Forensic Serology and DNA
FSC 635	Forensic Anthropology
FSC 642	Forensic Pathology II
	Prerequisite: FSC 630

COLLEGE OF PROFESSIONAL STUDIES

BACHELOR OF ARTS INTEGRATED MARKETING COMMUNICATION

Program Lead: Susan Silverstone; (858)642-8430; ssilvers@nu.edu

This program is a blend of the concepts of marketing principles, which include advertising, sales promotion, public relations, and direct marketing working together as a unified force with the integration of communication using the latest communication technology. Graduates will be able to demonstrate an ability to seek and integrate high-quality research for the purpose of evaluating their own insights into the professional and academic study of communication and media studies, while also understanding the roles that communication plays in developing individuals and social institutions. The BA in Integrated Marketing Communication prepares learners for careers in marketing, sales, advertising, fundraising, PR, and other persuasive fields. It combines a business degree with advanced communication skills for traditional and Web 2.0 platforms including print, broadcast, social, personal, and mobile media.

Program Learning Outcomes
Upon successful completion of this program, students will be able to:
• Apply appropriate theoretical precepts and practical skills in communication.
• Demonstrate effective communication and leadership skills consistent with a professional marketing environment.
• Develop a strategic communication program, gathering and utilizing data from the conduct of appropriate market research.
• Evaluate global marketing strategies for products and services, utilizing contemporary buyer behavior.
• Apply persuasion theory to the development of media messages.
• Develop multi-platform, multi-public message disseminations plans.
• Integrate program content and collaborate with peers to develop a basic marketing plan that contains all essential elements, including ethical considerations.

Degree Requirements
To receive a Bachelor of Arts in Integrated Marketing Communication, students must complete at least 180 quarter units as articulated below, 45 of which must be completed in residence at National University, 76.5 of which must be completed at the upper-division level, and a minimum of 70.5 units of the University General Education requirements. In the absence of transfer credit, additional general electives may be necessary to satisfy total units for the degree. The following courses are specific degree requirements. All students receiving an undergraduate degree in Nevada are required by State Law to complete a course in Nevada Constitution.

Prerequisites for the Major
(2 courses; 7.5 quarter units)
ENG 101*   Effective College English II
             (3 quarter units)
             Prerequisite: ENG 100
MKT 302A   Marketing Fundamentals

* May be used to meet General Education requirements

Core Requirements
(16 courses; 72 quarter units)
COM 305   Intercultural Communication
            Prerequisite: ENG 101
COM 402   Communication Technologies
            Prerequisite: ENG 101
COM 365   Integrated Marketing Comm
            Prerequisite: ENG 101, COM 402 and MKT 302A or COM 315
COM 324   Critical Thinking and Ethics
            Prerequisite: ENG 101
COM 334   Persuasion
            Prerequisite: ENG 101
COM 354   Professional Presentations
            Prerequisite: ENG 101
MKT 430   Intro to Global Marketing
            Prerequisite: MKT 302A
MKT 434   Marketing Research & Analytics
            Prerequisite: MKT 302A
MKT 443   Introduction to Advertising
            Prerequisite: MKT 302A
MKT 441   Channel and Value Networks
            Prerequisite: MKT 302A
MKT 445   Digital Marketing
            Prerequisite: MKT 302A
MKT 446   Introduction to Services Mkt
            Prerequisite: MKT 302A
COM 441   Communication Strategies
            Prerequisite: COM 334
COM 442   Communication Campaigns
            Prerequisite: COM 441
COM 443   Interactive & Mobile Campaigns
            Prerequisite: COM 442
MKT 480   Marketing Project
            Prerequisite: Completion of 31.5 quarter units of upper-division core requirements and MKT 302A

MASTER OF SCIENCE CYBERSECURITY

Program Lead: Christopher Simpson; (858)309-3418; csimpson@nu.edu

The Master of Science in Cybersecurity is a professional degree for those who endeavor through technical and managerial measures to ensure the security, confidentiality, integrity, authenticity, control, availability and utility of the world's computing and information systems infrastructure. The program has a required core and a required specialization which can be selected from some alternatives. The core is designed to provide a means of supporting the variety of backgrounds (both education and work experience) that those who wish to study this area may bring to the program. The core is also a statement of the knowledge domain that is common to most efforts in this area. The specializations provide for study in particular domains of knowledge within the field - which are also tied to communities of effort within the field.

Program Admission Requirements
All students who seek to enroll in the MS Cybersecurity program must interview with the Faculty Advisor noted above prior to enrolling in the first course of the program.

Program Learning Outcomes
Upon successful completion of this program, students will be able to:
- Devise a mitigation plan against both external and internal vulnerabilities to enterprise computer infrastructures and sensitive digital assets.
- Analyze and evaluate multiple risk assessment methods and strategies.
- Compare and contrast the legal and ethical aspects of cybersecurity at the Federal, State, and International level.
- Assess and summarize the legal and ethical requirements of a cyber security professional.
- Integrate project management skills to produce a cybersecurity solution.
- Evaluate the results of a security assessment to assess the security status of a network or computer system.
- Conduct in-depth research into a specific cybersecurity topic, including finding and integrating relevant research results of others.
- Integrate systems-level-infrastructure thinking into cybersecurity problem identification and resolution, and effectively communicate the solution

Degree Requirements
To obtain the Master of Science in Cyber Security, students must complete 58.5 graduate units. A total of 13.5 quarter units of graduate credit may be granted for equivalent graduate work completed at another regionally accredited institution, as it applies to this degree, and provided the units were not used in earning another advanced degree. All students must complete the 9 core requirements and choose an Area of Specialization. Please refer to the graduate admissions requirements for specific information regarding application and evaluation.

Core Requirements
(9 Courses; 40.5 quarter units)

CYB 600   Cybersecurity Technology
CYB 601   Cyber Sec. Toolkit Utilization
            Prerequisite: CYB 600 with a minimum grade of B
CYB 602   Threat Modeling & Intel
            Prerequisite: CYB 601
CYB 604   Wireless and Mobile Security

	Prerequisite: CYB 602	
CYB 606	Net Defense & Cloud Security	
	Prerequisite: CYB 604	
CYB 607	Cloud Security	
	Prerequisite: CYB 606	
CYB 699A	Cyber Security Project I	
	Prerequisite: CYB 608 and completion of one specialization area.	
CYB 699B	Cyber Security Project II	
	Prerequisite: CYB 699A	
CYB 699C	Cyber Security Project III	
	Prerequisite: CYB 699B with a minimum grade of S	

Requirements for the Specializations
(4 courses; 18 quarter units)
All students must choose one Specialization defined below:

Specialization in Enterprise Cybersecurity Management
Program Lead: Christopher Simpson; (858)309-3418; csimpson@nu.edu

The specialization in Enterprise Cybersecurity Management provides study in the professional domain of cybersecurity that focuses on the programmatic management and governance of cybersecurity for organization. This arena particularly involves larger organizations, often in government, that have codified standards, policies and practices for this field.

Program Learning Outcomes
Upon successful completion of this program, students will be able to:
- Differentiate among the models, architectures, challenges and global legal constraints of secure electronic commerce technologies used to ensure transmission, processing and storage of sensitive information. (PLO5)
- Prescribe how to provide message privacy, integrity, authentication and non-repudiation using network security practices and infrastructure hardening techniques. (PLO 6)
- Assess, from both a national and global perspective, the relative demands of Internet-openness, legislation and law-enforcement, and individual right-to-privacy. (PLO 8)
- Forecast the impact of continually advancing technology and national and international cyber-legislation on cybersecurity. (PLO 9)
- Generate critical thinking in analysis and synthesis of enterprise and global cybersecurity issues through effective individual and team graduate-level written and oral assignments. (PLO 11)
- Produce a successful project using project development skills. (PLO 12)
- SPECIALIZATION: Prepare an IT risk mitigation and security plan.
- SPECIALIZATION: Prepare and create an enterprise

disaster recovery and business continuity plan.
- SPECIALIZATION: Derive information assurance from an INFOSEC perspective.

Program Requirements
(4 courses; 18 quarter units)

CYB 608	CyberSec Audit and Assessment	
	Prerequisite: CYB 607	
CYB 612	Cybersecurity Policy	
	Prerequisite: CYB 608	
CYB 613	Governance in Cybersecurity	
	Prerequisite: CYB 612	
CYB 616	CybSec Program Management	
	Prerequisite: CYB 613	

Specialization in Ethical Hacking & Pen Testing
Program Lead: Christopher Simpson; (858)309-3418; csimpson@nu.edu

The Ethical Hacking & Pen Testing specialization is designed to provide unique applications involved in the professional domain of cybersecurity. The curriculum focus is directed toward ethical hacking and penetration (Pen) testing. Penetration tests probe network and information system security components by conducting simulated attacks on systems. This specialization prepares the professional to develop rules of engagement, prepare a tool kit, discover and exploit system vulnerabilities, ethically conduct a penetration test and prepare penetration test documentation. Red Teaming practices are utilized, and Red vs. Blue team exercises are executed.

Program Learning Outcomes
Upon successful completion of this program, students will be able to:
- Devise a mitigation plan against both external and internal vulnerabilities to enterprise computer infrastructures and sensitive digital assets. (PLO2)
- Integrate systems-level-infrastructure thinking into cybersecurity problem identification and resolution, and effectively communicate the solution. [PLO4]
- Forecast the impact of continually advancing technology and national and international cyber-legislation on cybersecurity. [PLO9]
- Conduct in-depth research into a specific cybersecurity topic, including finding and integrating relevant research results of others. [PLO10]
- Generate critical thinking in analysis and synthesis of enterprise and global cybersecurity issues through effective individual and team graduate-level written and oral assignments. [PLO11]
- Integrate project development skills in producing a security system. [PLO12]
- SPECIALIZATION: Produce a pen test authorization and rules of engagement document.
- SPECIALIZATION: Prepare and synthesize process

specifications of Red Team actions against a Blue Team defense of a computer infrastructure.

- SPECIALIZATION: Prepare and synthesize process specifications of a Blue Team defense used to protect the computer infrastructure against a Red Team attack

Program Requirements
(4 courses; 18 quarter units)

CYB 608	CyberSec Audit and Assessment	
	Prerequisite: CYB 607	
CYB 632	Ethical Hacking	
	Prerequisite: CYB 608	
CYB 633	Red Teaming	
	Prerequisite: CYB 632	
CYB 634	Advanced Penetration Testing	
	Prerequisite: CYB 633	

MASTER OF SCIENCE IN NURSING
Program Lead: Dr. Peter Morante; pmorante@nu.edu

The Master of Science in Nursing (MSN) degree program is for Registered Nurses who hold a nursing diploma, or an associate nursing degree, or a Bachelor Degree in Nursing (BSN). In keeping with the standards for graduate education for advanced practice nursing delineated by the American Association of College of Nursing in the Essentials of Master's Education for Advanced Practice Nurses, the purpose of the MSN program is to prepare students to assume leadership roles in their particular specialization. Masters level nursing education is the appropriate level of education for nursing professionals who are seeking roles that require advanced practice skills in order to function as providers and organizers of the health care delivery process.

This program is approved by the Commission on Collegiate Nursing Education (CCNE).

MSN Admission Requirements
The following candidates are eligible for admission into the MSN program:

1. Candidates who hold a BSN degree from a nursing program that meets one of these criteria 1) State Board of Nursing approved, 2) Nationally accredited nursing program, 3) from a regionally accredited University/School, if applicable, and meet the University requirements for graduate study, listed in the General Catalog under Academic Information for Graduate Degrees.

2. Candidates who currently enrolled in the final course of their BSN degree program at National University or recently graduated from National University with their BSN. (Candidates in the RN- BSN Completion Program are eligible to take MSN courses in the last month of their RN to BSN Completion Program) and meet the University requirements for graduate study, listed in the General Catalog

under Academic Information for Graduate Degrees including Admission in the Term prior to Bachelor's Degree Completion.

*Candidates will be conditionally accepted into the MSN program until the following proofs are provided.

Students may not begin specialization courses until the conditional acceptance is lifted, by providing proof of the following:

- Current, active and unencumbered RN license in the State of employment and/or residence
- Copy of BSN transcript
- Proof of Employment offer in the capacity of a registered nurse (RN)

*If candidates are unable to provide proof of BSN degree conferral, RN license and employment offer, admission to the MSN program will be rescinded.

3. Candidates who hold a nursing diploma, or an associate nursing degree from a nursing program that meets one of these criteria 1) State Board of Nursing approved, 2) Nationally accredited nursing program, 3) from a regionally accredited University/School, if applicable and have completed a General Education curriculum or College Level Examination Program (CLEP) in these areas:
- Physical and Biological Sciences
- Mathematical Concepts and Quantitative Reasoning
- Social and Behavioral Sciences
- Arts, Humanities and Language
- Writing, Speech and Communication

*Exception: Candidates do not need to have a Bachelor's degree for admission to the graduate program as specified in Academic Information for Graduate Degrees and Credentials, Admission procedures.

Candidates wishing to be admitted under the exception must select one of the RN-MSN pathway options, and successfully complete the required courses prior to beginning Master of Science in Nursing (MSN) core requirements. RN-MSN Option 1 includes NSG 500 RN- MSN Portfolio Transition; **OR** Option 2 includes NSG 444/444A Community Population Nursing with Lab, and NSG 442/442A Nursing Leadership and Management with Lab, and NSG 447/447A Quality Improvement with Lab).

All MSN Candidates including RN to MSN
- Have a cumulative GPA of at least 3.0 on a 4.0 scale. Candidates with a GPA of 2.5-2.99 will be considered by the MSN Admission Committee on a case by case basis
- Complete the university graduate admission application
- Submit the MSN application packet

Candidates who graduated from a BSN program other

than NU must

- Provide proof of current, active and unencumbered RN license in the State of employment and/or residence.
- Provide one official transcript from each college or university attended to the Registrar's office
- Provide two professional recommendation on approved forms, preferably from individuals who hold graduate or doctoral degrees

Prior to the start of their specialization courses, all candidates must

- Provide evidence of current, active professional liability and malpractice insurance coverage throughout the program
- Provide evidence of specified immunizations, a report of a recent physical examination, a clear drug screen and background check and current BLS certification.

Additional Program Information

1. Candidates are required to meet with their Admission Advisor to review the process for applying to and acceptance into the Nursing program. The specifics described are: program of study, schedules of courses, requirements for progression in the program. Note: Prospective students should review the MSN and Post-Graduate Certificate packet before submitting the application.
2. Students should be proficient in operating a personal computer, including: demonstrated competency in standard computer operating systems and electronic filing systems, basic keyboarding skills, organizing and sorting electronic documents; demonstrated knowledge of standard computer applications to include Microsoft Word and Excel; familiarity with using internet browsers and standard email systems such as MS Outlook.
3. MSN program is online with mandatory onsite component. All accepted applicants must attend one virtual online program orientation. In addition, students in the FNP and PMHNP specializations are required to attend four one-day Objective Structured Clinical Examination (OSCE) in Costa Mesa. FNP and PMHNP practicum courses are offered as immersion practicum experiences, conducted in faculty approved, in-person, preceptored clinical settings.
4. Students who request a change in specialization after they have been admitted to a prior specialization must resubmit an application packet including a new goal statement, and one recommendation form completed addressing the new specialization area. A new resume is not required. All prerequisites must be met prior to admissions into the new specialization. The new application will be re-submitted via the Graduate Nursing e-form Application in SOAR by the Admission Counselor.
5. Students who withdraw from the program or withdraw their application prior to beginning the program will not need to reapply if the point of initial application occurred

within one year of re-application. Students requesting to be re-admitted after one year of initial application for admissions will need to resubmit a new application packet including all required items needed for the application packet and drug screening, background check, immunizations and physical examination. Re-application to the program does not guarantee acceptance or provide an advantage to being accepted.

NOTE: Additional fees apply as described:
- MSN – $475 (NSG 600)
- RN-MSN students taking NSG 500 carry additional fee of $3,280.
- RN-MSN students taking NSG 442/A, NSG 444/A, NSG 447/A carry additional technology fees.
- FNP and PMHNP Area of Specializations carry additional program fees.

See "General Information" section of catalog for course fees.

Program Learning Outcomes
Upon successful completion of this program, students will be able to:

- Implement appropriate theories, models, frameworks, and concepts from nursing and non-nursing disciplines when designing interventions that influence healthcare outcomes for diverse populations in a variety of settings.
- Collaborate with interdisciplinary teams, to evaluate fiscally appropriate healthcare delivery systems that integrate research and clinical expertise to provide evidence-based, patient-centered care.
- Evaluate economic, policy, environmental, and social forces that impact nursing practice, health care delivery and quality of health care.
- Participate in the analysis, implementation and evaluation of strategies for improving nursing practice through the implementation of health information systems and technologies.
- Demonstrate a professional commitment to creating an environment of lifelong learning for patients, families, communities, and other healthcare practitioners.

Degree Requirements
The Master of Science in Nursing requires a minimum of 82.5 quarter units of graduate credit. A total of 13.5 quarter units of graduate credit may be granted for equivalent graduate work completed at another regionally accredited institution, as it applies to this degree and provided the units were not used in earning another advanced degree. Refer to the General Catalog section on graduate admission requirements for specific information regarding admission and evaluation. Students must maintain a cumulative GPA of 3.0 and must maintain a B (84%) in all core and specialization courses.

RN-MSN Pathway Options
Candidates that do not hold a Bachelor's degree for admission to the graduate program will follow one of the RN-MSN pathway. Candidates accepted into the RN-MSN must provide completion of an associate degree in nursing or diploma Nursing Program and hold an unencumbered Registered Nurse license.

Option 1 – 1 course; 6 quarter units
Only if a student holds an associate degree in nursing or diploma in nursing and has at least one year of registered nursing experience in leadership, community health and quality improvement is eligible to complete NSG 500. Students are required to complete a minimum of 88.5 graduate quarter units.

Option 2 – 6 undergraduate courses; 25.5 quarter units
Student holds an associate degree in nursing or diploma in nursing with no registered nursing experience in leadership, community health and quality improvement is eligible to complete NSG 442/A, NSG 444/A, NSG 447/A. Students are required to complete 25.5 undergraduate quarter units, and 82.5 graduate quarter units for a total of 108 quarter units.

RN-MSN Pathway Course Requirements
(1 course; 6 quarter units **OR** 6 courses; 25.5 quarter units)
OPTION 1
NSG 500   RN-MSN Portfolio Transition
              (6 quarter units)
              Prerequisite: Completion of an Associate Degree or Diploma Nursing Program and holding an unencumbered Registered Nurse license.

OR

OPTION 2
ALL the following **six (6)** courses

NSG 444   Community Population NSG (6 quarter units)
              Corequisite: NSG 444A
NSG 444A   Comm Pop NSG Practicum (3 quarter units)
              Corequisite: NSG 444
NSG 442   NSG Leadership and Management
              Corequisite: NSG 442A
NSG 442A   NSG LDRSHP & MGMT Practicum
              (3 quarter units)
              Corequisite: NSG 442
NSG 447   Qual Improvement
              Corequisite: NSG 447A
NSG 447A   Qual Improvement Practicum
              Corequisite: NSG 447

MSN Core Requirements
(6 courses; 27 quarter units)
NSG 600   Advanced Practice Nursing
NSG 620   Theory in Advanced Practice
NSG 623   Biomedical Statistics
NSG 606   Health Policy & Finance
NSG 607   EBP for Advanced NSG Practice

NSG 622   QI & Project Management

**Students must pass all core courses before beginning specialization courses.

Specialization in Family Nurse Practitioner
Program Lead: Amelia Buenvenida; abuenvenida@nu.edu

The Family Nurse Practitioner (FNP) specialization will prepare advanced practice nurses to manage the care of individuals and families across the lifespan. The FNP program is designed for nurses who hold a nursing diploma, or an associate nursing degree, or a Baccalaureate Degree in nursing (BSN) who wish to advance their knowledge, education and skills to practice in an Advanced Practice role as a FNP. Graduates are eligible to sit for the FNP national certification examinations offered by the American Nurses Credentialing Center (ANCC) or the American Academy of Nurse Practitioners (AANP). The Program emphasis is to foster the FNP's abilities to critically think; make differential diagnoses; use evidence-based findings to improve healthcare outcomes; and be accountable for the provision of healthcare to diverse individuals and families in the areas of health promotion, disease prevention, management of acute and chronic health conditions and primary care. The FNP provides clinical management of primary care conditions in a variety of clinics and community-based settings.

Admission Requirements
Students applying for the FNP area of specialization must be accepted to the MSN program.

NOTE: Additional course fees apply. Course fees can be referenced in the general
information section of this catalog.

Program Learning Outcomes
Upon successful completion of this program, students will be able to:
- Synthesize theoretical and empirical knowledge derived from the physical and behavioral sciences and humanities as a basis for professional advanced clinical nursing practice.
- Devise evidence-based health promotion and disease prevention strategies at the patient, family, organizational, community, and population levels for the purpose of improving healthcare outcomes.
- Utilize current technologies to deliver, enhance, and document care across multiple settings to achieve optimal outcomes.
- Advocate for culturally sensitive health care systems and policies that meet ethical and legal standards as a means to improve outcomes and reduce disparity.
- Model collaboration with interdisciplinary and intradisciplinary teams in healthcare systems delivering

care to complex, multi-need patients, families, and communities.
- Analyze the impact of national and global health policy on the cost, quality, and access to care in diverse patient populations.

Degree Requirements
Students must complete a total of 55.5 quarter units for the FNP specialization. Students must maintain a cumulative GPA of 3.0 and must maintain a B (84%) in all courses. Students must obtain at least 600 hours at an approved practicum site with a designated approved preceptor during the practicum courses.

Total Specialization Requirements
(12 courses; 55.5 quarter units)

Preparation for FNP Specialization
(3 courses; 15 quarter units)

NSG 681*	Advanced Physical Assessment	
	(6 quarter units)	
NSG 641*	Advanced Pharmacology I	
NSG 682*	Advanced Pathophysiology	

Students have the option of taking the preparation for FNP specialization concurrently with the 6 MSN core courses.

Specialization Requirements
(9 courses; 40.5 quarter units)

Students must pass all Preparation for FNP Specialization courses before beginning any specialization courses.

NSG 680	Diversity Issues in APN
FNP 642	Advanced Pharmacology II
FNP 683A	Primary Care of Adult and Aged
	Corequisite: FNP 683B
FNP 683B	Care of Adult & Aged Practicum
	Corequisite: FNP 683A
FNP 684A	Primary Care-Women & Children
	Corequisite: FNP 684B
FNP 684B	Women and Children Practicum
	Corequisite: FNP 684A
FNP 685A	FNP Residency
	Corequisite: FNP 685B
FNP 685B	FNP Residency Practicum
	Corequisite: FNP 685A
FNP 689	FNP Capstone

Specialization in Psychiatric-Mental Health Nurse Practitioner - Lifespan
Program Lead: Khadija Hamisi; khamisi@nu.edu

The Psychiatric-Mental Health Nurse practitioner- Lifespan (PMHNP) is registered nurse prepared at the master's degree level and specializes in primary mental health care for individuals, groups and populations across the lifespan. The PMHNP Program is designed for nurses who hold a nursing diploma, or an associate nursing degree, or a Baccalaureate Degree in Nursing (BSN), who wish to advance their knowledge, education and skills to practice in an advanced practice role as a PMHNP. This advanced practice nurse maintains a critical role in the health care team and ensures collaboration and the provision of safe, effective, coordinated care. As an independent member of the health care team, and in partnership with patients, the PMHNP provides a variety of evidence-based services and therapies. The PMHNP assesses, makes diagnoses and plans care for complex psychiatric and concomitant medical issues, including the prescription and management of psychoparmacologic agents. The PMHNP advocates for patients and their families within a recovery and trauma-informed paradigm. The PMHNP ensures that patients and their families are engaged and actively participate in their behavioral health (mental health and substance use) care as they respond to the illness experience. The PMHNP continuously enhances their care through quality improvement and safety efforts and influences policy at the local, regional and national levels. The PMHNP melds the art and science of professional nursing and skillfully manages the acute and enduring issues posed by people with behavioral health issues across the lifespan. Graduates of this PMHNP Program are eligible to sit for the American Nurses Credentialing Center (ANCC) Psychiatric-Mental Health Nurse Practitioner Lifespan competency-based examination.

Admission Requirements
Students applying for the PMHNP area of specialization must be accepted to the MSN program.

NOTE: Additional course fees apply. Course fees can be referenced in the general
information section of this catalog.

Program Learning Outcomes
Upon successful completion of this program, students will be able to:
- Synthesize theoretical and empirical knowledge derived from the physical and behavioral sciences and humanities as a basis for professional advanced clinical nursing practice.
- Devise evidence-based health promotion and disease prevention strategies at the patient, family, organizational, community, and population levels for the purpose of improving health care outcomes.
- Utilize current technologies to deliver, enhance, and document care across multiple settings to achieve optimal outcomes
- Apply organizational and systems leadership to current healthcare issues for the promotion of quality, effective and safe patient care, including the emphasis on ethical and critical decision making, effective working relationships, and a systems-perspective approach.

- Model collaboration and coordination with interprofessional teams in health care systems delivering care to complex, multi-need patients, families and communities.
- Synthesize broad organizational, client-centered, and culturally appropriate concepts in the planning, delivery, management, and evaluation of evidence-based clinical prevention and population behavioral health care and services to individuals, families, and identified populations.

Degree Requirements
Students must complete a total of 55.5 quarter units for the PMHNP specialization. Students must maintain a cumulative GPA of 3.0 and must maintain a B (84%) in all courses. Students must obtain at least 510 hours at an approved practicum site with a designated approved preceptor during the practicum courses.

Total Specialization Requirements
(12 courses; 55.5 quarter units)

Preparation for PMHNP Specialization Courses
(3 courses; 15 quarter units)
NSG 641*	Advanced Pharmacology I	
NSG 681*	Advanced Physical Assessment	
	(6 quarter units)	
NSG 682*	Advanced Pathophysiology	

*Students have the option of taking the preparation for MNP specialization concurrently with the 6 MSN core courses.

Specialization Requirements
(9 courses; 40.5 quarter units)

Students must pass all Preparation for PMHNP Specialization courses before beginning any specialization courses.

NSG 680	Diversity Issues in APN
MNP 643	Psychopharmacology in MH Care
MNP 694	MH Care: Adults/Aging Adults
MNP 696A	Adults/Aging Adults Practicum
	Corequisite: MNP 694
MNP 687	MH Care: Children/Adolescents
MNP 696B	Children/Adoles Practicum
	Corequisite: MNP 687
MNP 688A	Introduction to Psychotherapy
	Corequisite: MNP 688B
MNP 688B	Intro Psychotherapy Practicum
	Corequisite: MNP 688A
MNP 697	PMHNP Capstone

SANFORD COLLEGE OF EDUCATION

MASTER OF SCIENCE EDUCATIONAL

ADMINISTRATION WITH PRELIMINARY ADMINISTRATIVE SERVICES CREDENTIAL OPTION (CALIFORNIA)
Program Lead: Glenn Sewell; 916-855-4118; gsewell@nu.edu

This program is designed for students who are committed to improving education and who are interested in advancing their careers by becoming school site administrators. It can be completed with or without a preliminary credential option for those pursuing a career in the nonpublic education sector. For students who want to pursue the credential option, please see the Sanford College of Education Credential Information section of the catalog.

Program Learning Outcomes
Upon successful completion of this program, students will be able to:
- Analyze the process for creating, stewarding, and communicating a shared vision that includes school-wide goals for improving teaching and learning.
- Examine the role of the instructional leader in the context of the stewardship of effective instructional practices.
- Examine the role of the instructional leader in the context of curriculum development, implementation, and assessment.
- Analyze the collaborative, ongoing processes of data-based school growth plans.
- Critiques systems for the provision of professional growth opportunities for school teachers, staff, and administrators.
- Examine the complex Interaction of all of a school's systems to promote teaching and learning.
- Analyze ways in which a school can engage their communities to promote the shared vision.
- Examine a topic related to educational leadership through the lens of a researcher.

Degree Requirements
To receive a Master of Science in Educational Administration, students must complete at least 45 quarter units of graduate work. A total of 4.5 quarter units of graduate credit may be granted for equivalent graduate work completed at another institution, as it applies to this degree and if the units were not used in earning another advanced degree. Course equivalence cannot be granted for life experience.

Requirements for the Major
(10-12 courses; 45-49.5 quarter units)
To be successful in this program, it is highly recommended to take program coursework in sequence described below.

(10 courses; 45 quarter units)
EDA 655	School Improvement Leadership

EDA 653	Curriculum Leadership
EDA 654	Instructional Leadership
	Prerequisite: EDA 653 and EDA 655
EDA 600A	Applications in Leadership
	Prerequisite: EDA 654
EDA 652	Visionary Leadership
EDA 656	Professional Growth Leadership
EDA 657	Org/Systems Leadership
EDA 658	Community Leadership
ILD 625	Educational Research
EDA 637	Action Research
	Prerequisite: ILD 625

Internship Option

(2 courses: 4.5 quarter units)

EDA 602A and EDA 602B are aligned to the Internship candidate needs during the time they are enrolled in the program.

EDA 602A	EDA Internship A
	(2.25 quarter units)
	Prerequisite: Candidate must provide documentation showing appointment to an educational administration position requiring the Administrative Services Internship credential.
EDA 602B	EDA Internship B
	(2.25 quarter units)
	Prerequisite: Candidate must provide documentation showing appointment to an educational administration position requiring the Administrative Internship credential, EDA 602A with a minimum grade of S

COURSE INFORMATION

Terminated Courses

CYB 603 Cyber Security Ethical Issues
HIS 300 Roots of Western Civilization

Course Descriptions

BIO – Biology

BIO 480 Studies in Biology
Project-based study in biology under the individual direction of the faculty. Topics and sites are specifically designed in collaboration with teachers and students. Units can be taken separately or cumulatively; this course can be repeated depending upon the needs of individual students.

BIO 485 Contemporary Topics in Biology
Prerequisite: BIO 305 or BIO 310 or BIO 330
Examination of current topics in biology. Emphasis on evaluation, discussion, and analysis of peer-reviewed literature.

CYB- Cybersecurity

CYB 600 Cybersecurity Technology
Examines the fundamental concepts of cybersecurity and the associated technology. Includes securing the environment, security technologies in the environment, security threats, and security responses. Ethical and legal aspects of cybersecurity are also examined**.**

CYB 601 Cyber Sec. Toolkit Utilization
Prerequisite: CYB 600 with a minimum grade of B
An introduction to the tools and techniques utilized in cyber defense and offensive cyber operations. Use of technical tools will be demonstrated in virtual lab environments.

CYB 604 Wireless and Mobile Security
Prerequisite: CYB 602
Concepts covered include a comprehensive wireless and mobile security overview including the design, planning, installation, and maintenance of wireless network security infrastructures. Emphasis is placed on information warfare countermeasures relative to government, military, terrorist and rogue, and private enterprise demographics.

CYB 606 NetSec Monitoring and IR
Prerequisite: CYB 604
An introduction to the concepts of network security monitoring and incident response. Students will conduct an analysis and evaluation of network security monitoring tools and techniques. Students will examine the methods for conducting incident response.

CYB 607 Cloud Security
Prerequisite: CYB 606
An introduction to the concepts of cloud computing. This course will examine the security implications of operating in a cloud computing environment. Tools and techniques to implement DevSec ops will be introduced.

CYB 608 CyberSec Audit and Assessment
Prerequisite: CYB 607
This class focuses on the legal and regulatory requirements, ethical issues, basic methodology and technical tools to conduct cybersecurity audits and assessments. Students will explore the frameworks, tools, and techniques to conduct a cybersecurity assessment.

CYB 612 Cybersecurity Policy
Prerequisite: CYB 608
Students will explore the development of cybersecurity policy for commercial and government organizations. The legal and regulatory requirements for cybersecurity policy development will be examined.

CYB 613 Governance in Cybersecurity
Prerequisite: CYB 612
An examination of the functions and processes to implement and monitor cybersecurity controls across an organization. An exploration of commercial and government compliance requirements.

CYB 616 CybSec Program Management
Prerequisite: CYB 613
An examination of the methods and frameworks for implementing and managing an enterprise cybersecurity program. Students will explore various frameworks and tools to develop and manage a cybersecurity program that supports an organization's mission.

CYB 632 Ethical Hacking
Prerequisite: CYB 608
Students will apply principles of penetration testing to identify and exploit vulnerabilities in networked and cloud based information systems and make recommendations for mitigation.

CYB 633 Red Teaming
Prerequisite: CYB 632
Red Teaming, or Alternative Analysis, is the practice of viewing a problem from an adversarial or competitor's perspective. The objective of Red Teams is to enhance decision making, practices of secured system protection applicable by establishing countermeasures of defense. Students will learn to employ actively open-minded/problem solving and unbiased thinking to conduct red team assessments.

CYB 634 Advanced Penetration Testing
Prerequisite: CYB 633
Students will analyze and utilize advanced penetration

testing tools and techniques. Web application attack tools and techniques will be examined.

CYB 699C Cyber Security Project III
Prerequisite: CYB 699B with a minimum grade of S
Master's level project dealing with a student's area of specialization in the Cyber Security and Information Assurance program. The students will create an original project with practical applications using cybersecurity policy, regulatory, and testing frameworks. Project management techniques and collaboration will be emphasized along with the ethical and legal aspects of the project. Project results will be presented to a panel for review. Grading is by H, S or U only.

EDA - Educational Administration

EDA 602A EDA Internship A (2.25 quarter units)
Prerequisite: Candidate must provide documentation showing appointment to an educational administration position requiring the Administrative Services Internship credential.
This course is designed to support administrator internship candidates by providing an instructor/coach for support with developing communication avenues and for providing daily practical experience support over and beyond the preliminary administrative services credential program courses. Grading is S or U only.

EDA 602B EDA Internship B (2.25 quarter units)
Prerequisite: Candidate must provide documentation showing appointment to an educational administration position requiring the Administrative Internship credential; EDA 602A with a minimum grade of S.
This course is designed to support administrator internship candidates by providing an instructor/coach for support with developing communication avenues and for providing daily practical experience support over and beyond the preliminary administrative services credential program courses. This course, EDA 602B, is a continuation of EDA 602A. Grading is S or U only.

LIT – Literature

LIT 463 Contemporary World Literature
Prerequisite: ENG 240 and LIT 100
Study of contemporary literary works from diverse cultures outside the Anglo-American literary tradition.

MKT- Marketing

MKT 302A Marketing Fundamentals
This course is the introduction to contemporary marketing theory and practice in both the local and global marketplace. Basic concepts of marketing are examined with an emphasis on marketing positioning, segmentation and targeting as well as product development and distribution.

MKT 430 Intro to Global Marketing
Prerequisite: MKT 302A
An introduction to the cultural environment of global markets, including such topics as cultural dynamics, management styles, and political and legal environments. Students learn how to assess global marketing opportunities as well as develop and implement strategies to capitalize on those opportunities.

MKT 434 Marketing Research & Analytics
Prerequisite: MKT 302A
A course that gives the student an overview and practical application of contemporary methods for gathering, analyzing, and preparing market research for use in marketing decision making. It focuses on defining organizational information needs and designing appropriate research methods to obtain it. Specific topic areas include qualitative and quantitative research methods, secondary research, internal market intelligence systems, and data analysis.

MKT 441 Channel and Value Networks
Prerequisite: MKT 302A
A study of all phases of management skills in the field of physical distribution with emphasis on customer service and international distribution strategies, the course covers distribution strategies for products and services. It pays specific attention to direct distribution (from manufacturing to retail), indirect distribution (agents, independent representatives, and VARs), and direct marketing (fulfillment centers).

MKT 442A Intro to Public Relations
An exploration of the various methods for dealing with three of the most critical audiences for business information: investors, government agencies and the public.

MKT 445 Digital Marketing
Prerequisite: MKT 302A
An introduction to digital marketing that explores the development, implementation, and measurement of digital-based marketing strategies and tactics including search engine optimization (SEO), social media marketing, and online advertising.

MKT 480 Integrated Mkt Comm Capstone
Prerequisite: Completion of 31.5 quarter units of upper-division core requirements and MKT 302A
This course aims to synthesize the marketing knowledge gained through various core courses required in the program. This will include integration of the program learning outcomes through research project.