NORTHEASTERN STATE UNIVERSITY

NEW PROGRAM

Artificial Intelligence and Data Analytics, BS

CIP: 110102

• The program integrates theoretical knowledge with hands-on experience, emphasizing the practical use of data analytics and AI technologies in real-world settings.

Required Core-21 hours

IS 3083 Spreadsheet Analysis

IS 3063 Principles of Information Systems

MGMT 3843 Business Ethics

TECH 3023 Technology and Society

TECH 3933 Business Statistics

TECH 4823 Machine Learning Applications

BADM 3113 Business Communications

Major Electives-27 hours

BADM 4203 Business Analytics

BADM 3003 Experiential and Career Seminar

HCA 4323 Health Information Analytics

IS 3023 Object Based Visual Programming

IS 3513 Introduction to Information Security

IS 4293 Business Database Management Systems

IS 4950 IS Internship

MKT 4103 Marketing Measurement

TECH 4103 Business Decision Analysis

TECH 4143 Project Management

TECH 4803 Emerging Technologies Workshop

TECH 4863 Applications of Robotics & Unmanned Vehicles

TECH 4843 Applications of Augmented and Virtual Reality

TECH 4883 3D Modeling and Game Design

TECH 4670 Industrial Problems

TECH 4xx3 Special Topics in AI and Data Analytics

CBT Electives -15 Hours

Any 3000/4000 level electives from BADM/MGMT/MKT/TECH/IS/FIN/ACCT

General Education Requirements: 40 hours

Major Requirements: 63 hours

Open Electives: 17 hours

Degree Total: 120 hours

Military Science, BS

CIP: 290399

- The program equips students with a comprehensive understanding of military theory, practice, and operations.
- Interdisciplinary program integrates studies in leadership, strategy, project management, communications, security studies, and military history, providing a robust foundation for those aspiring to excel in military or defense-related careers.
- Emphasis is placed on developing critical thinking, decision-making skills, and ethical leadership qualities necessary for effective service and command.

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Required Core - 21 hours

MILS 1003 Introduction to Military Science

MILS 2103 Military Leadership: Tactics

MILS 3103 Military Leadership: Operations

MILS 4103 Military Leadership: Strategy

MILS 4xx3 Strategic Leadership: Current and Future Warfare

MILS 4013 Military Theory and Doctrine

MILS 4003 Capstone in MILS

Military Science Electives - 9 hours

MILS 3533 Studies in Historical Topics in Military Science & Leadership

MILS 4533 Studies in Current Topics in Military Science & Leadership

Major Guided Electives - 12 hours

Students will take a total of 12 hours of major guided electives, choosing all twelve hours within one of the groups below in (1) Operations and Management, (2) Communication, (3) Public Relations, (4) Student Designed (with approval of MILS program director).

(1) Operations & Management - (select up to 12 hours to satisfy major electives)

ACCT 2103 Introduction to Financial Accounting

BADM 3253 Management Analysis and Control

BADM 3933 Business Statistics

MGMT 3183 Principles of Management

MGMT 3213 Principles of Operations Management

MGMT 4143 Project Management

(2) Communications - (select up to 12 hours to satisfy major electives)

COMM 2313 Interpersonal Communication

COMM 2543 Intercultural Communication

COMM 3303 Group Dynamics

COMM 3453 Conflict Management

COMM 4223 Leadership Communication

COMM 4443 Organizational Communication

(3) Public Relations - (select up to 12 hours to satisfy major electives)

M S 2173 Media Software

M S 3133 Basic Public Relations

M S 3513 Media Management & Planning

M S 4453 Public Relations Writing

M S 4533 Crisis Communication

M S 4653 Public Relations and the Media

(4) Student Designed Elective Set - (propose 12 hours with approval of MILS director

General Education Requirements: 40 hours

Major Requirements: 45 hours Minor Requirements: 18 hours Open Electives: 17 hours Degree Total: 120 hours

Nursing (Prelicensure), BSN

CIP: 513801

• The program will education and prepare students for careers as registered nurses who can perform the nursing skills needed to implement therapeutic care for patients in the medically underserved populations of northeastern Oklahoma and surrounding region.

General Education Requirements (41 Credit Hours)

Meet General Education Requirements including the following specific general education courses:

BIOL 1011 Introductory Biology I Laboratory

BIOL 1013 Introductory Biology I

CHEM 1123 General Chemistry I (Lecture)

CHEM 1131 General Chemistry I (Laboratory)

MATH 1313 Elementary Statistics

NUTR 1653 Basic Nutrition

PSYC 1113 Introduction to Psychology

Pre-Professional (18 Credit Hours)

BIOL 2154 Human Anatomy

BIOL 3224 Microbiology

BIOL 3314 Human Physiology

SCI 3113 Science & Medical Terminology

SOC 1113 Introduction to Sociology

Traditional Nursing (61 Credit Hours)

NURS 3003 Professional Nursing Role

NURS 3xx3 Pharmacology in Nursing

NURS 3053 Health Assessment

NURS 3xx3 Fundamentals of Nursing Practice

NURS 3xx3 Clinical Nursing I

NURS 3xx4 Medical/Surgical Nursing

NURS 3xx3 Clinical Nursing II

NURS 3xx3 Mental Health Nursing

NURS 4133 Fundamentals of Nursing Research

NURS 3223 Person and Family Centered Nursing Care

NURS 3xx4 Maternal/Child Nursing

NURS 4xx3 Clinical Nursing III

NURS 4113 Population Health Nursing

NURS 3103 Transcultural Nursing

NURS 4213 Nursing Leadership & Management

NURS 4xx3 Critical and Emergent Care

NURS 4xx1 NCLEX-RN Test Prep Review

NURS 4xx2 Clinical Nursing IV

NURS 4953 Professional Nursing Synthesis

NURS 4003 Current Trends and Issues in Nursing

NURS 4xx2 Preceptorship

General Education Requirements: 41 hours

Major Requirements: 79 hours

Degree Total: 120 hours

NEW MINOR

Gerontology Minor

CIP: 190702

 This program covers the physical, mental, and sociological aspects of the complex process known as aging and provides a more introspective look into the positive and negative effects on the family. Complete 18 hours of the following courses

Required Courses:

HFS 4393 The Aging Family

HDFS 4xx3 Gerontology Policy and Family Programs

HFS 4080 Problems in Human and Family Sciences

Choose 9 hours from the following:

HFS 4060 Problems in Human and Family Sciences

HFS 4070 Problems in Human and Family Sciences

PSYC 4363 Adult Development and Aging

SOC 4813 Death and Dying

DEGREE PROGRAM MODIFICATIONS

Applied Geographic Information Systems, M.S.

OSHRE code: 199

• Divide the program into two options: a traditional option and an advanced option. The existing options would be renamed the Sustainability Elective Block and the Professional Enhancement Elective Block.

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Required Core Courses - 15 hours

GEOG 5053 - Advanced Computer Cartography

GEOG 5453 - Field Techniques in GIS

GEOG 5803 - Advanced Geospatial Technologies

GEOG 5833 - Advanced GIS and Spatial Analysis

GEOG 5853 - Advanced Automation and Scripting

Options - 9 hours

New:

Traditional Pathway

Foundation Courses (6):

For students who do not have an undergraduate degree meeting the the foundation requirements. The may be met by completing a graduate level introduction to GIS and/or a graduate level course in descriptive statistics. Complete the following courses, or other course that meets the foundation course outcomes as approved by the graduate coordinator.

GEOG 5xx3 Fundamentals of Applied GIS

CR J 5743 Statistics in Social Sciences

or

Sustainability (9321)

Select three courses from the following:

GEOG 5193 - Sustainability in Urban Settings

GEOG 5223 - Advanced Natural Hazards

GEOG 5623 - Sustainability Theory and Practices

GEOG 5743 - Climate Variability and Change

GEOG 5763 - Humans and Environmental Change

Professional Enhancement (9322)

Choose three courses (9 hours) with the guidance of the program director/advisor. Concentration areas may include Public Relations, Leadership, American Studies, Natural Sciences, Business Administration, Criminal Justice, and other areas as approved.

Practicum/Capstone or Thesis - 6 hours

Practicum/Capstone

GEOG 5863 - GIS Practicum

GEOG 5870 - GIS Practicum Capstone (3 hours)

Thesis

GEOG 5990 - Thesis (total of 6 hours)

Degree Total: 30 hours

EDUC 5503 Educational Statistics

Required Core Courses - 15 hours

GEOG 5053 - Advanced Computer Cartography

GEOG 5453 - Field Techniques in GIS

GEOG 5803 - Advanced Geospatial Technologies

GEOG 5833 - Advanced GIS and Spatial Analysis

GEOG 5853 - Advanced Automation and Scripting

Options - 9 hours

Electives - 9 hours

The elective requirement may be met by completing courses from the Sustainability Elective Block or the Professional Enhancement Elective Block. Both require 9 credit hours of graduate-level coursework.

Sustainability (9321)

Select three courses from the following:

GEOG 5193 - Sustainability in Urban Settings

GEOG 5223 - Advanced Natural Hazards

GEOG 5623 - Sustainability Theory and Practices

GEOG 5743 - Climate Variability and Change

GEOG 5763 - Humans and Environmental Change

Professional Enhancement (9322)

Choose three courses (9 hours) with the guidance of the program director/advisor.

Concentration areas may include Public Relations, Leadership, American Studies, Natural Sciences, Business Administration, Criminal Justice, and other areas as approved.

Practicum/Capstone or Thesis - 6 hours

Practicum/Capstone

GEOG 5863 - GIS Practicum

GEOG 5870 - GIS Practicum Capstone (3 hours)

Thesis

GEOG 5990 - Thesis (total of 6 hours)

Advanced Pathway:

Required Core Courses - 15 hours

GEOG 5053 - Advanced Computer Cartography

GEOG 5453 - Field Techniques in GIS

GEOG 5803 - Advanced Geospatial Technologies

GEOG 5833 - Advanced GIS and Spatial Analysis

GEOG 5853 - Advanced Automation and Scripting

Options - 9 hours

Electives - 9 hours

The elective requirement may be met by completing courses from the Sustainability Elective Block or the Professional Enhancement Elective Block. Both require 9 credit hours of graduate-level coursework.

Sustainability (9321)

Select three courses from the following:

GEOG 5193 - Sustainability in Urban Settings

GEOG 5223 - Advanced Natural Hazards

GEOG 5623 - Sustainability Theory and Practices

GEOG 5743 - Climate Variability and Change

GEOG 5763 - Humans and Environmental Change

Professional Enhancement (9322)

Choose three courses (9 hours) with the guidance of the program director/advisor. Concentration areas may include Public Relations, Leadership, American Studies, Natural Sciences, Business Administration, Criminal Justice, and other areas as approved.

Practicum/Capstone or Thesis - 6 hours

Practicum/Capstone

GEOG 5863 - GIS Practicum

GEOG 5870 - GIS Practicum Capstone (3 hours)

Thesis

GEOG 5990 - Thesis (total of 6 hours)

Degree Total: 30 hours

Creative Writing B.A

OSHRE code: 162

 Move 3 hours in the Creative Writing B.A. program from the General English Electives category to the Creative Writing Electives category. This will reduce the General English Electives category to 12 hours and increase the Creative Writing Electives category to 9 hours.

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Creative Writing Core - 21 hours

Creative Writing majors must earn a minimum grade of C in any course counting toward the Creative Writing major.

DRAM 4513 - Playwriting

ENGL 3143 - Introduction to Creative Writing

ENGL 3543 - English Literature I

and ENGL 3653 - English Literature II

OR

ENGL 3773 - American Literature I

and ENGL 3883 - American Literature II

ENGL 4153 - Poetry Writing Workshop

ENGL 4163 - Fiction Writing Workshop

ENGL 4853 - Creative Writing Portfolio Workshop

Creative Writing Electives - 6 hours

Select 6 hours from the following:

ENGL 3110 - Creative Nonfiction

ENGL 3693 - Short Story Workshop

ENGL 4253 - Advanced Fiction Writing Workshop

ENGL 4433 - Screen Writing Workshop

ENGL 4823 - Advanced Creative Writing Workshop

New:

Creative Writing Core - 21 hours

Creative Writing majors must earn a minimum grade of C in any course counting toward the Creative Writing major.

DRAM 4513 - Playwriting

ENGL 3143 - Introduction to Creative Writing

ENGL 3543 - English Literature I

and ENGL 3653 - English Literature II

OR

ENGL 3773 - American Literature I

and ENGL 3883 - American Literature II

ENGL 4153 - Poetry Writing Workshop

ENGL 4163 - Fiction Writing Workshop

ENGL 4853 - Creative Writing Portfolio Workshop

Creative Writing Electives - 6 9 hours

Select 6 9 hours from the following:

ENGL 3110 - Creative Nonfiction

ENGL 3693 - Short Story Workshop

ENGL 4253 - Advanced Fiction Writing Workshop

ENGL 4433 - Screen Writing Workshop

ENGL 4823 - Advanced Creative Writing Workshop

ENGL 4953 - Publication Workshop ENGL 4953 - Publication Workshop **General English Electives - 15 hours** General English Electives - 15 12 hours 9 hours of Advanced (3000/4000 level) 9 hours of Advanced (3000/4000 level) literature electives literature electives Complete 6 hours from the following Complete 6 3 hours from the following courses: courses: ENGL 3083 - Professional & Technical Writing ENGL 3083 - Professional & Technical Writing ENGL 3253 - Traditional Grammar and Usage ENGL 3253 - Traditional Grammar and Usage ENGL 4083 - Linguistics ENGL 4083 - Linguistics ENGL 4123 - Advanced Composition for ENGL 4123 - Advanced Composition for Teachers Teachers ENGL 4363 - Advanced English Composition ENGL 4363 - Advanced English Composition General Education Requirements: 40 hours General Education Requirements: 40 hours Major Requirements: 42 hours Major Requirements: 42 hours Minor Requirement: 18 hours Minor Requirement: 18 hours Open Electives: 20 Open Electives: 20 Degree Total: 120 hours Degree Total: 120 hours

Mechanical Engineering, B.S.

OSHRE code: 185

- Removing BIOL 1013 as a required general education course
- Adding ENGR 3xx3
- Changing ENGR 3913 title
- Restructuring curriculum
- Reduce degree hours from 124 to 120

Old:	New:
Required General Education Courses:	Required General Education Courses:

BIOL 1013 - Introductory Biology I BIOL 1013 - Introductory Biology I CHEM 1123 - General Chemistry I (Lecture) CHEM 1123 - General Chemistry I (Lecture) MATH 1714 - Precalculus MATH 1714 - Precalculus **Required Courses - 78 hours Required Courses - 78 hours** ENGR 1003 - Introduction to Engineering ENGR 1003 - Introduction to Engineering ENGR 3XX3 - Materials Science ENGR 3133 - Statics ENGR 3213 - Mechanics (Dynamics) ENGR 3133 - Statics ENGR 3263 - Mechanics of Materials ENGR 3213 - Mechanics (Dynamics) ENGR 3282 - Mechanics Laboratory ENGR 3263 - Mechanics of Materials ENGR 3513 - Electricity and Magnetism ENGR 3282 3281- Mechanics Laboratory (Circuit Theory) ENGR 3513 - Electricity and Magnetism ENGR 3543 - Engineering Analysis and (Circuit Theory) Methods ENGR 3543 - Engineering Analysis and ENGR 3653 - Thermodynamics I Methods ENGR 3662 - Thermal Engineering ENGR 3653 - Thermodynamics I Lab **ENGR 3662 - Thermal Engineering** ENGR 3813 - Fluid Mechanics Lab **ENGR 3661 Thermal Engineering Laboratory** ENGR 3852 - Fluids Laboratory ENGR 3813 - Fluid Mechanics ENGR 3874 - Systems and Control ENGR 3852 3851- Fluids Laboratory ENGR 3913 - Computational Methods in Engineering ENGR 3874 - Systems and Control ENGR 4152 - Engineering Design I ENGR 3913 - Computational Methods in **Engineering** ENGR 4252 - Engineering Design II **ENGR 3913 Engineering Graphics and** ENGR 4413 - Advanced Heat **Simulation** MATH 2614 - Calculus I ENGR 4152 - Engineering Design I MATH 2624 - Calculus II ENGR 4252 - Engineering Design II MATH 2634 - Calculus III

MATH 3513 - Statistical Methods ENGR 4413 - Advanced Heat MATH 3983 - Linear Algebra MATH 2614 - Calculus I MATH 4113 - Differential Equations MATH 2624 - Calculus II PHYS 2115 - Engineering Physics I MATH 2634 - Calculus III MATH 3513 - Statistical Methods PHYS 2215 - Engineering Physics II **Mechanical Engineering Electives- 3 hours** MATH 3983 - Linear Algebra ENGR 3413 - Statistical Thermodynamics MATH 4113 - Differential Equations ENGR 3583 - Manufacturing Processes PHYS 2115 - Engineering Physics I ENGR 3714 - Electronics PHYS 2215 - Engineering Physics II ENGR 4323 - Machine Elements **Mechanical Engineering Electives- 3 hours** ENGR 4653 - Thermodynamics II ENGR 3413 - Statistical Thermodynamics ENGR 3583 - Manufacturing Processes Electives - 3 hours ENGR 3714 - Electronics Select three hours from the following courses: ENGR 4323 - Machine Elements ENGR 3413 - Statistical Thermodynamics ENGR 4653 - Thermodynamics II ENGR 3583 - Manufacturing Processes Electives - 3 hours ENGR 3714 - Electronics Select three hours from the following ENGR 4323 - Machine Elements courses: ENGR 4653 - Thermodynamics II ENGR 3413 - Statistical Thermodynamics General Education Requirements: 46 hours ENGR 3583 - Manufacturing Processes Major Requirements: 78 hours ENGR 3714 - Electronics ENGR 4323 - Machine Elements Total Degree: 124 hours ENGR 4653 - Thermodynamics II General Education Requirements: 40 hours Major Requirements: 78 hours

Open Electives: 2 hours
Total Degree: 120

Music, B.M.

OSRHE Code: 204

• Add the new courses (4xx2 Music Production Internship and 4xx3 Advanced Mixing and Mastering) into the available electives for Jazz Studies and Commercial Music.

Old:

Required General Education:

MUS 2863 - World Music

Required Music Core - 44 hours

All students enrolled in the Bachelor of Music program complete 44 hours of required courses, plus the hours in their concentration (Peformance: 28 hours + 6 elective) (Jazz Studies and Commercial Music: 30 hours + 5 electives).

MUS 1011 - Piano Class I

MUS 1101 - Piano Class II

MUS 1531 - Music Theory I (Aural)

MUS 1541 - Music Theory II (Aural)

Applied Music, 2000-level (8 hours)

MUS 2011 - Piano Class III

MUS 2101 - Piano Class IV

MUS 2553 - Music Theory I (Harmony)

MUS 2563 - Music Theory II (Harmony)

New:

Required General Education:

MUS 2863 - World Music

Required Music Core - 44 hours

All students enrolled in the Bachelor of Music program complete 44 hours of required courses, plus the hours in their concentration (Peformance: 28 hours + 6 elective) (Jazz Studies and Commercial Music: 30 hours + 5 electives).

MUS 1011 - Piano Class I

MUS 1101 - Piano Class II

MUS 1531 - Music Theory I (Aural)

MUS 1541 - Music Theory II (Aural)

Applied Music, 2000-level (8 hours)

MUS 2011 - Piano Class III

MUS 2101 - Piano Class IV

MUS 2553 - Music Theory I (Harmony)

MUS 2563 - Music Theory II (Harmony)

MUS 3011 - General Conducting

MUS 3011 - General Conducting

MUS 3041 - Music Theory III (Aural)

MUS 3061 - Music Theory IV (Aural)

MUS 3553 - Music Theory III (Harmony)

MUS 3563 - Music Theory IV (Harmony)

MUS 3701 - Music Arranging and Technology

MUS 3763 - History and Literature of Music to 1750

MUS 3853 - History and Literature of Music Since 1750

Applied Music, 4000-level (8 hours)

Select one of the following options:

Jazz Studies and Commercial Music (4622)

Required Courses for Jazz Studies and Commercial Music Option - 30 hours

Students in the Jazz Studies and Commercial Music option complete 30 hours of required courses and an additional 5 hours of electives.

Jazz Ensemble (8 hours)

Jazz Combo/Small Ensemble (4 hours)

MUS 1322 - Music Business and Entrepreneurship

MUS 1612 - Music Production I

MUS 1973 - American Popular Music Improv: Theory & Practice I

MUS 2020 - Recital Lab (8 semesters required)

MUS 3041 - Music Theory III (Aural)

MUS 3061 - Music Theory IV (Aural)

MUS 3553 - Music Theory III (Harmony)

MUS 3563 - Music Theory IV (Harmony)

MUS 3701 - Music Arranging and Technology

MUS 3763 - History and Literature of Music to 1750

MUS 3853 - History and Literature of Music Since 1750

Applied Music, 4000-level (8 hours)

Select one of the following options:

Jazz Studies and Commercial Music (4622)

Required Courses for Jazz Studies and Commercial Music Option - 30 hours

Students in the Jazz Studies and Commercial Music option complete 30 hours of required courses and an additional 5 hours of electives.

Jazz Ensemble (8 hours)

Jazz Combo/Small Ensemble (4 hours)

MUS 1322 - Music Business and Entrepreneurship

MUS 1612 - Music Production I

MUS 1973 - American Popular Music Improv: Theory & Practice I

MUS 2020 - Recital Lab (8 semesters required)

MUS 2523 - American Popular Music

MUS 2523 - American Popular Music Appreciation

MUS 2612 - Music Production II

MUS 2973 - American Popular Music Improv: Theory & Practice II

MUS 3230 - Junior Recital for Jazz Studies and Commercial Music

MUS 4721 - Composition for Jazz & American Popular Music

MUS 4740 - Senior Recital for Jazz Studies and Commercial Music

MUS 4822 - Arranging for Jazz & American Popular Music

Electives for Jazz Studies and Commercial Music - 5 hours

Additional Ensemble participation (maximum of 4 hours)

MUS 2533 - Rock Music History

MUS 2931 - Instrumental Jazz Improvisation

or MUS 4931 - Instrumental Jazz Improvisation (maximum or 2 hours)

MUS 3111 - Keyboard Skills

MUS 4011 - Advanced Instrumental Conducting and Rehearsal Techniques

MUS 4021 - Advanced Choral Conducting and Rehearsal Techniques

MUS 4322 - Music Notation and Sequencing

MUS 4520 - Seminar in Music

MUS 4612 - Studies in Vocal Literature

Appreciation

MUS 2612 - Music Production II

MUS 2973 - American Popular Music Improv: Theory & Practice II

MUS 3230 - Junior Recital for Jazz Studies and Commercial Music

MUS 4721 - Composition for Jazz & American Popular Music

MUS 4740 - Senior Recital for Jazz Studies and Commercial Music

MUS 4822 - Arranging for Jazz & American Popular Music

Electives for Jazz Studies and Commercial Music - 5 hours

Additional Ensemble participation (maximum of 4 hours)

MUS 2533 - Rock Music History

MUS 2931 - Instrumental Jazz Improvisation

or MUS 4931 - Instrumental Jazz Improvisation (maximum or 2 hours)

MUS 3111 - Keyboard Skills

MUS 4011 - Advanced Instrumental Conducting and Rehearsal Techniques

MUS 4021 - Advanced Choral Conducting and Rehearsal Techniques

MUS 4322 - Music Notation and Sequencing

MUS 4520 - Seminar in Music

MUS 4612 - Studies in Vocal Literature

MUS 4632 - Studies in Instrumental Literature

MUS 4632 - Studies in Instrumental Literature

General Education Requirements: 46 hours

Major Requirements: 78 hours

Total Degree Hours: 124 hours

MUS 4xx2 Music Production Internship MUS 4xx3 Advanced Mixing and Mastering

General Education Requirements: 40 hours

Major Requirements: 78 hours

Open Electives: 2 hours

Total Degree Hours: 120 hours

Pysics, B.S.

UI4.

OSRHE Code: 159

- Remove CS 2163 Computer Science II fro the Core.
- Add PHYS 4951 Introduction to Research in Physics (previously PHYS 4951 Senior Seminar) to Required Courses of Applied Physics and remove PHYS 4350 Special Topics in Physics.
- Change PHYS 4901 Research in Physics requirement to PHYS 4900 Research in Physics.
- Move PHYS 4254 Quantum Mechanics from electives of Applied Physics degree to required courses, move PHYS 4323 Physics for Engineers from required courses of Applied Physics degree to electives.
- Add the following mechanical engineering courses as electives for the major: ENGR 3263 Mechanics of Materials, ENGR 3543 Engineering Analysis and Methods, ENGR 3653 Thermodynamics I, ENGR 3813 Fluid Mechanics, ENGR 3874 Systems and Control, ENGR 3913 Computational Methods in Engineering, ENGR 4413 Advanced Heat, and ENGR 4653 Thermodynamics II.

Now.

Old.	INEW.
Physics General Education Requirements	Physics General Education Requirements
The following are course prorequisites that	The following are course prorequisites that

The following are course prerequisites that may be completed as part of the General Education requirements.

BIOL 1013 - Introductory Biology I

The following are course prerequisites that may be completed as part of the General Education requirements.

BIOL 1013 - Introductory Biology I

CHEM 1123 - General Chemistry I (Lecture)	CHEM 1123 - General Chemistry I (Lecture)
CHEM 1131 - General Chemistry I (Laboratory)	CHEM 1131 - General Chemistry I (Laboratory)
CS 2014 - Computer Science I	CS 2014 - Computer Science I
MATH 1513 - College Algebra (or higher MATH)	MATH 1513 - College Algebra (or higher MATH)
These General Education Courses apply to the Physics Education option.	These General Education Courses apply to the Physics Education option.
EDUC 4823 - Technology and the 21st Century Learner (Physics Ed option)	EDUC 4823 - Technology and the 21st Century Learner (Physics Ed option)
PSYC 1113 - Introduction to Psychology (Physics Ed option)	PSYC 1113 - Introduction to Psychology (Physics Ed option)
Second Language (Physics Ed option)	Second Language (Physics Ed option)
Physics Core - 34 hours	Physics Core - 34 31 hours
CS 2163 - Computer Science II	CS 2163 - Computer Science II
MATH 2614 - Calculus I	MATH 2614 - Calculus I
MATH 2624 - Calculus II	MATH 2624 - Calculus II
PHYS 2115 - Engineering Physics I	PHYS 2115 - Engineering Physics I
PHYS 2215 - Engineering Physics II	PHYS 2215 - Engineering Physics II
PHYS 3213 - Modern Physics	PHYS 3213 - Modern Physics
PHYS 3613 - Optical Instrumentation	PHYS 3613 - Optical Instrumentation
ENGR 3714 - Electronics	ENGR 3714 - Electronics
PHYS 4503 - Advanced Physics Laboratory	PHYS 4503 - Advanced Physics Laboratory
Options	Options
Select one of the following options:	Select one of the following options:
Applied Physics - 33 hours (7677)	Applied Physics - 33 34 hours (7677)
Required Courses - 27 hours	Required Courses - 27 28 hours

MATH 2634 - Calculus III	MATH 2634 - Calculus III
PHYS 3004 - Scientific Computation	PHYS 3004 - Scientific Computation
PHYS 3103 - Mathematical Methods in Physics	PHYS 3103 - Mathematical Methods in Physics
PHYS 3113 - Mechanics	PHYS 3113 - Mechanics
ENGR 3413 - Statistical Thermodynamics	ENGR 3413 - Statistical Thermodynamics
PHYS 4114 - Electrodynamics	PHYS 4114 - Electrodynamics
PHYS 4323 - Physics for Engineers	PHYS 4323 - Physics for Engineers
PHYS 4350 - Special Topics in Physics (1 hour)	PHYS 4350 - Special Topics in Physics (1 hour)
PHYS 4901 - Research in Physics (2 hours)	PHYS 4901 - Research in Physics (2 hours)
Electives - 6 hours	PHYS 4254 Quantum Mechanics
Select 6 hours from the following:	PHYS 4951 Senior Seminar
CHEM 4523 - Chemical Thermodynamics	PHYS 4900 Research in Physics
CHEM 4531 - Experimental Physical	Electives - 6 hours
Chemistry	Select 6 hours from the following:
CHEM 4623 - Quantum Chemistry and	CHEM 4523 - Chemical Thermodynamics
Dynamics	CHEM 4531 - Experimental Physical Chemistry
CHEM 4631 - Applications of Computational Chemistry	,
CS 3173 - Basic Computer Architecture	CHEM 4623 - Quantum Chemistry and Dynamics
CS 3223 - Programming Languages	CHEM 4631 - Applications of Computational
CS 3343 - Computer Operating Systems	Chemistry
CS 4553 - Parallel Programming	CS 3173 - Basic Computer Architecture
MATH 3513 - Statistical Methods	CS 3223 - Programming Languages
MATH 3623 - Mathematical Statistics	CS 3343 - Computer Operating Systems
MATH 3713 - Abstract Algebra I	CS 4553 - Parallel Programming
MATH 3983 - Linear Algebra	ENGR 3263 Mechanics of Materials ENGR 3543 Engineering Analysis and

MATH 4113 - Differential Equations

MATH 4123 - Partial Differential Equations

MATH 4233 - Numerical Analysis

MATH 4303 - Complex Analysis I

MATH 4403 - Mathematical Modeling

MATH 4413 - Vector Analysis

PHYS 3623 - Wave Optics

PHYS 4254 - Quantum Mechanics

PHYS 4350 - Special Topics in Physics

Applied Physics Option:

General Education Requirements: 47

Major Requirements: 67

Open Electives: 6

Total Degree Hours: 120

Physical Education Option:

General Education Requirements: 47

Major Requirements: 48

Professional Education: 29

Total Degree Hours: 124

Methods

ENGR 3653 Thermodynamics I

ENGR 3813 Fluid Mechanics

ENGR 3874 Systems and Control

ENGR 3913 Computational Methods in

Engineering

ENGR 4413 Advanced Heat

ENGR 4653 Thermodynamics I

MATH 3513 - Statistical Methods

MATH 3623 - Mathematical Statistics

MATH 3713 - Abstract Algebra I

MATH 3983 - Linear Algebra

MATH 4113 - Differential Equations

MATH 4123 - Partial Differential Equations

MATH 4233 - Numerical Analysis

MATH 4303 - Complex Analysis I

MATH 4403 - Mathematical Modeling

MATH 4413 - Vector Analysis

PHYS 3623 - Wave Optics

PHYS 3623 Optics II

PHYS 4323 Physics for Engineers

PHYS 4254 - Quantum Mechanics

PHYS 4350 - Special Topics in Physics

Applied Physics Option

General Education Requirements: 47

Major Requirements: 65

Open Electives: 8

Total Degree Hours: 120

Physical Education Option:
General Education Requirements: 47
Major Requirements: 45
Professional Education: 29
Total Degree Hours: 121

CERTIFICATE MODIFICATIONS

Program Management Certificate

OSHRE code: 198

• Change the name from "Program Management" to "Project Management."

No change in curriculum.	
Required Courses - 12 hours	
MBA 5513 Strategic Project Management	
MGMT 5523 Applications in Project Management	
MGMT 5953 Capstone - Certification	
MBA/MGMT Electives (3 hours)	

Public Health Certificate

OSHRE code: 165

• This certificate is an embedded certificate within the MPH. Changes to the MPH in the previous academic cycle necessitate this update.

Old:	New:
Required Courses - 18 hours	Required Courses - 18 hours
HCA 5013 - Healthcare Policy and Ethical Leadership	HCA 5013 - Healthcare Policy and Ethical Leadership
	MPH 5003 Introduction to Public Health

	MPH 5173 Fundamentals of Epidemiology and Biostatistics MPH 5372 Public Health Policy MPH 5843 Cultural Competency for Community Public Health
MPH 5153 - Biostatistics I	MPH 5153 Biostatistics I
MPH 5113 - Epidemiology I	MPH 5113 - Epidemiology I
MPH 5062 - Environmental and Occupational Health	MPH 5062 - Environmental and Occupational Health
MPH 5042 - Social and Health Behavior Theories	MPH 5042 - Social and Health Behavior Theories
MPH 5022 - Public Health Interventions	MPH 5022 - Public Health Interventions

Public Health Leadership Certificate

OSHRE code: 167

• This certificate is an embedded certificate within the MPH. Changes to the MPH in the previous academic cycle necessitate this update.

Old:	New:
Required Courses - 15 hours	Required Courses - 15 hours
Complete the following courses:	Complete the following courses:
HCA 5853 - Critical Issues in Healthcare Administration	HCA 5853 - Critical Issues in Healthcare Administration
MBA 5213 - Organizational Behavior and Change	MBA 5213 - Organizational Behavior and Change
MBA 5513 - Strategic Project Management	MBA 5513 - Strategic Project Management
MPH 5003 - Introduction to Public Health	MPH 5003 - Introduction to Public Health
MPH 5303 - Essentials for Public Health Leadership	MPH 5303 - Essentials for Public Health Leadership

MPH 5323 - Current Issues in Public Health	MPH 5323 - Current Issues in Public Health
	MPH 5353 Managing Change in Public Health
	MPH 5843 Cultural Competency for Community Public Health

MINOR MODIFICATIONS

Early Care Minor

CODE: 6757

• Remove the HDFS 3623 Challenges in the Family course from this area and replace it with HDFS 4873 Positive Guidance Techniques course

Old:	New:
Required Courses - 18 hours	Required Courses - 18 hours
ECED 4113 - Creative Expression for Early Childhood	ECED 4113 - Creative Expression for Early Childhood
HDFS 3203 - Birth to Three: Ages and Stages	HDFS 3203 - Birth to Three: Ages and Stages
HDFS 3413 - Birth to Three: Healthy Beginnings	HDFS 3413 - Birth to Three: Healthy Beginnings
HDFS 3623 - Challenges in the Family	HDFS 3623 - Challenges in the Family
HDFS 3833 - Family Engagement	HDFS 3833 - Family Engagement
SPED 4433 - Introduction to Education of	
Children with Exceptionalities	HDFS 4873 Positive Guidance Techniques
	SPED 4433 - Introduction to Education of Children with Exceptionalities

Environmental Science Minor

CODE: 7311

- Add BIOL 1013 Intro to Biology I and BIOL 1011 Intro to Biology I Lab.
- Remove courses no longer in a consistent rotation, add courses that are consistently taught.

Old:

Environmental Science Minor General Education Requirements

The following course prerequisite may be completed as part of the General Education requirements.

GEOL 1114 - Physical Geology

Required Courses 11 hours

BIOL 3413 - Environmental Problems

BIOL 3344 - Environmental Physiology

GEOL 4134 - Environmental Geology

Electives 7 hours

Complete 7 hours from the following:

BIOL 3224 - Microbiology

BIOL 3244 - Ichthyology

BIOL 3464 - Field Botany

BIOL 3524 - Ecology

BIOL 4214 - Animal Parasitology

BIOL 4234 - Mammalogy

BIOL 4264 - Ornithology

BIOL 4584 - Herpetology

CHEM 3523 - Environmental Chemistry

CR J 4503 - Environmental and Wildlife Law

ENVM 4033 - Environmental Chemistry

GEOG 3033 - Environmental Geography

New:

Environmental Science Minor General Education Requirements

The following course prerequisite may be completed as part of the General Education requirements.

GEOL 1114 - Physical Geology

BIOL 1013 Introductory Biology I BIOL 1011 Introductory Biology I Laboratory

Required Courses 11 12 hours

BIOL 3413 - Environmental Problems

BIOL 3344 - Environmental Physiology

GEOL 4134 - Environmental Geology

BIOL 1023 Introductory Biology II BIOL 1021 Introductory Biology II

Laboratory

Electives 7 6 hours

Complete 7 hours from the following:

BIOL 3224 - Microbiology

BIOL 3244 - Ichthyology

BIOL 3464 - Field Botany

BIOL 3524 - Ecology

BIOL 4214 - Animal Parasitology

BIOL 4234 - Mammalogy

BIOL 4264 - Ornithology

GEOG 3343 - Extreme Weather	BIOL 4584 - Herpetology
GEOG 3813 - Geographic Information Systems	CHEM 3523 - Environmental Chemistry
SCI 4124 - Earth Science	CR J 4503 - Environmental and Wildlife Law
SOC 4453 - Environmental Sociology	ENVM-4033 - Environmental Chemistry
Total 18 hours	GEOG 3033 - Environmental Geography
Total 18 Hours	GEOG 3343 - Extreme Weather
	GEOG 3813 - Geographic Information Systems
	SCI 4124 - Earth Science
	SOC 4453 - Environmental Sociology
	BIOL 3003 Plant Biology
	BIOL 3013 Animal Biology BIOL 3413 Environmental Problems
	GEOL 4113 Oceanography
	SCI 3543 Water Regulations
	Total 18 hours

Human Development and Family Studies Minor

CODE: 6758

• Remove the HDFS 4873 Positive Child Guidance course and add the HDFS 3623 "Challenges in the Family" from the Early Care Minor

Old:	New:	ĺ
Required Courses	Required Courses	
HDFS 3143 - The Developing Child	HDFS 3143 - The Developing Child	
HDFS 3613 - Family Life Cycle	HDFS 3613 - Family Life Cycle	
	1	

HDFS 3863 - Diverse Family Systems	HDFS 3623 Challenges in the Family
HDFS 4683 - The Developing Adolescent	HDFS 3863 - Diverse Family Systems
HDFS 4823 - Families in Poverty	HDFS 4683 - The Developing Adolescent
HDFS 4873 - Positive Guidance Techniques	HDFS 4823 - Families in Poverty
	HDFS 4873 - Positive Guidance Techniques

General Education Curriculum Modification:

- Written and Oral Communication, Natural Sciences: No changes.
- Math Pathways: Renamed to Mathematics.
- Humanities: Added eight new course options, moved from the former Global Perspectives category.
- Social and Behavioral Science: Restructured to reflect specific goals; merged with parts of the former Global Perspectives section, reduced by 3 hours from 9 to 6.
- Global Perspectives: Renamed to Social and Global Analysis; shifted select courses to Humanities or Professional and Self Development.
- Life Skills: Renamed to Professional and Self-Development; updated to align with Degrees of Excellence (2023) outcomes, with added courses.
- University Strategies: Integrated into the new Professional and Self-Development section; requires University Strategies plus 3 additional hours from development categories.
- Total Hours: 40-42.

Old:	New:
Math Pathway (3 hrs, select one path) Social and Behavioral Sciences path MATH 1313 - Elementary Statistics Arts and Humanities path MATH 1473 - Applied Mathematics Math, Sciences and Health Professions path MATH 1513 - College Algebra Business and Technology path MATH 1523 - Functions and Change or a more advanced MATH course	Math Pathway Mathematics (3 hrs, select one path) Social and Behavioral Sciences path MATH 1313 - Elementary Statistics Arts and Humanities path MATH 1473 - Applied Mathematics Math, Sciences and Health Professions path MATH 1513 - College Algebra Business and Technology path MATH 1523 - Functions and Change or a more advanced MATH course
Written & Oral Communication (9 hours)	
ENGL 1113 - English Composition I	Written & Oral Communication (9 hours)
ENGL 1213 - English Composition II	ENGL 1113 - English Composition I

Choose ONE course from the following:

COMM 1113 - Fundamentals of Oral

Communication

COMM 2213 - Public Speaking

COMM 3223 - Business and Professional

Communication

COMM 3303 - Group Dynamics

Social and Behavioral Sciences (9 hours)

POLS 1113 - American Federal Government HIST 1483 - American History to 1877 or HIST 1493 - American History since 1877

Choose ONE course from the following:

ECON 2213 - Principles of Microeconomics

ECON 2313 - Principles of Macroeconomics

GEOG 2243 - Fundamentals of Geography

PSYC 1113 - Introduction to Psychology

SOC 1113 - Introduction to Sociology

Global Perspectives (3 hours)

The requirement may be completed by a course in any category.

1. Second Language

CHER 1113 - Elementary Cherokee I

CHER 1123 - Elementary Cherokee II

CHIN 1113 - Elementary Chinese I

CHIN 1213 - Elementary Chinese II

FREN 1113 - Elementary French I

FREN 1123 - Elementary French II

GERM 1113 - Elementary German I

GERM 1123 - Elementary German II

GREK 1113 - New Testament Greek I

GREK 1123 - New Testament Greek II

JPN 1113 - Elementary Japanese I

JPN 1123 - Elementary Japanese II

LAT 1113 - Elementary Latin I

LAT 1123 - Elementary Latin II

RUS 1113 - Elementary Russian I

RUS 1123 - Elementary Russian II

SPAN 1113 - Elementary Spanish I

SPAN 1123 - Elementary Spanish II

ENGL 1213 - English Composition II

Choose ONE course from the following:

COMM 1113 - Fundamentals of Oral

Communication

COMM 2213 - Public Speaking

COMM 3223 - Business and Professional

Communication

COMM 3303 - Group Dynamics

Social and Behavioral Sciences (9 hours)
History and Civic Consciousness (6 hours)

POLS 1113 - American Federal Government HIST 1483 - American History to 1877 or HIST 1493 - American History since 1877

Global Perspectives Social and Global Analysis (3 hours)

ECON 2213 - Principles of Microeconomics

ECON 2313 - Principles of Macroeconomics

GEOG 2243 - Fundamentals of Geography

GEOG 2133 - Global Economic Geography

PSYC 1113 - Introduction to Psychology

SOC 1113 - Introduction to Sociology

POLS 2313 - Introduction to International Relations

POLS 2353 - Introduction to Comparative Politics

COMM 2543 Intercultural Communication

CHER 1113 - Elementary Cherokee I

CHER 1123 - Elementary Cherokee II

SPAN 1113 - Elementary Spanish I

SPAN 1123 - Elementary Spanish II

SPED 3313 - American Sign Language I

SPED 3323 - American Sign Language II

Other foreign languages as approved

Life Skills (6 hours)

Professional and Self-Development (6 hours)

UNIV 1003 University Strategies

Select 3 hours from the following courses:

SPED 3313 - American Sign Language I SPED 3323 - American Sign Language II

2. American Indian Studies

ANTH 2223 - Introduction to American Indian Studies

CHER 4113 - Cherokee Cultural Heritage HIST 3723 - Native American History

3. Geography

GEOG 2003 - Global Studies

GEOG 2133 - Global Economic Geography

GEOG 2253 - World Regional Geography

4. Political Science

POLS 2313 - Introduction to International Relations

POLS 2353 - Introduction to Comparative Politics

5. Literature, Customs, and Society
COMM 2543 - Intercultural Communication
ENGL 3413 - World Literature
NUTR 3653 - Food and Culture

REL 2553 - Comparative Religion TECH 3023 - Technology and Society

Life Skills (6 hours)

1. ONE course from the following:

H ED 1113 - Personal Health NUTR 1653 - Basic Nutrition and

2. Select 3 hours from the following:

FIN 2113 - Personal Financial Planning HFS 1103 - Relationships and Marriage PSYC 1003 - Introduction to Human Behavior CS 1003 - Computers in Modern Society

Self-Development:

H ED 1113 - Personal Health

NUTR 1653 - Basic Nutrition

H ED 2212 - First Aid/Responding to Emergencies

FIN 2113 - Personal Financial Planning

HFS 1103 - Relationships and Marriage

PSYC 1003 - Introduction to Human Behavior

Professional Development

CS 1003 - Computers in Modern Society

or IS 1003 - Computers in Modern Society or a

more advanced CS/IS course

EDUC 4823 - Technology and the 21st Century

Learner (This course is designed for education majors)

LIBM 2601 - Basics of Online Research

LIBM 4611 - Advanced Online Research

M S 2453 - Media Literacy or COMM 2453 -

Media Literacy

TECH 3023 - Technology and Society Any military science leadership, physical education activity, and/or performance-based arts courses(s).

Humanities (6 hours)

ANTH 2223 - Introduction to American Indian Studies

ART 2023 - Art Appreciation

CHER 4113 - Cherokee Cultural Heritage

DRAM 2763 - Theatre Appreciation

DRAM 2843 - Film Appreciation

ENGL 2113 - Introduction to Literature

ENGL 3413 - World Literature

GEOG 2003 - Global Studies

GEOG 2253 - World Regional Geography

HIST 1113 - Early Western Civilization

HIST 1213 - Modern Western Civilization

HIST 3723 - Native American History

HUM 2113 - Ancient Cultures

HUM 2223 - Modern Cultures

MUS 2523 - American Popular Music

Appreciation

MUS 2533 - Rock Music History

MUS 2543 - Music Appreciation

MUS 2863 - World Music

NUTR 3653 - Food and Culture

or IS 1003 - Computers in Modern Society or a more advanced CS/IS course

EDUC 4823 - Technology and the 21st Century Learner (*This course is designed for education majors*)

H ED 2212 - First Aid/Responding to Emergencies

LIBM 2601 - Basics of Online Research LIBM 4611 - Advanced Online Research M S 2453 - Media Literacy or COMM 2453 - Media Literacy Any military science leadership, physical education activity, and/or performance-

based arts courses(s).

Humanities (6 hours)

ART 2023 - Art Appreciation

DRAM 2763 - Theatre Appreciation

DRAM 2843 - Film Appreciation

ENGL 2113 - Introduction to Literature

HIST 1113 - Early Western Civilization

HIST 1213 - Modern Western Civilization

HUM 2113 - Ancient Cultures

HUM 2223 - Modern Cultures

MUS 2523 - American Popular Music Appreciation

MUS 2533 - Rock Music History

MUS 2543 - Music Appreciation

MUS 2863 - World Music

PHIL 1013 - Introduction to Philosophy

WGS 2123 - Intro Women's & Gender Studies

Natural Sciences (7-9 hours)

At least one course from the biological or physical sciences must include a lab.

1. Biological Sciences (3-4 hours)

BIOL 1013 - Introductory Biology I and BIOL 1011 - Introductory Biology I Laboratory PHIL 1013 - Introduction to Philosophy REL 2553 - Comparative Religion WGS 2123 - Intro Women's & Gender Studies

Natural Sciences (7-9 hours)

At least one course from the biological or physical sciences must include a lab.

1. Biological Sciences (3-4 hours)

BIOL 1013 - Introductory Biology I and BIOL 1011 - Introductory Biology I Laboratory

BIOL 1114 - General Biological Science (Recommended for non-science majors - includes lab)

BIOL 1113 - General Biological Science (Lecture) (Recommended for non-science majors)

and BIOL 1111 - General Biological Science Lab (Recommended for non-science majors) BIOL 3413 - Environmental Problems

2. Physical Sciences (3-5 hours)

GEOL 1114 - Physical

Geology (Recommended for non-science

majors - includes lab)

SCI 1114 - General Physical

Science (Recommended for non-science

majors - includes lab)

SCI 1113 - General Physical Science

Lecture (Recommended for non-science majors)

and SCI 1111 - General Physical Science Lab (Recommended for non-science majors) SCI 1314 - Astronomy (Recommended for non-science majors - includes lab) A course in CHEM with lab A course in PHYS (includes lab)

Total 40-42 hours

BIOL 1114 - General Biological

Science (Recommended for non-science majors - includes lab)

BIOL 1113 - General Biological Science (Lecture) (Recommended for non-science majors)

and BIOL 1111 - General Biological Science Lab (Recommended for non-science majors) BIOL 3413 - Environmental Problems

2. Physical Sciences (3-5 hours)

GEOL 1114 - Physical

Geology (Recommended for non-science

majors - includes lab)

SCI 1114 - General Physical

Science (Recommended for non-science

majors - includes lab)

SCI 1113 - General Physical Science

Lecture (Recommended for non-science majors)

and SCI 1111 - General Physical Science Lab (Recommended for non-science majors) SCI 1314 - Astronomy (Recommended for

non-science majors - includes lab)

A course in CHEM with lab

A course in PHYS (includes lab)

University Studies (3 hours)

All beginning freshmen are required to enroll in their first semester. The course/orientation program helps students begin the transition to university life by providing information pertaining to campus life and the varied concerns that freshmen encounter while beginning their college careers. Students meet in small groups with faculty and participate in larger group activities that familiarize them with important academic, social, developmental, and financial concepts essential to a successful first year.

UNIV 1003 - University Strategies

Total Hours - 46 to 48	
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