Academic Program Proposals for October 25, 2024

The following is a list of academic program proposals being reviewed for possible consideration for approval at the October 25, 2024, Arkansas Higher Education Coordinating Board meeting. The summary contents are subject to change. The finalized version of the summaries will be available in the board book.

The institution's name, program title, and program summary are listed below. Contact ADHE for a copy of the proposals.

If you have concerns, objections, questions, or comments concerning a specific proposal, please send them to **Mason Campbell, Assistant Commissioner of Academic Affairs** (mason.campbell@adhe.edu) no later than October 1, 2024.

NORTH ARKANSAS COLLEGE
TECHNICAL CERTIFICATE IN ENERGY MANAGEMENT
CERTIFICATE OF PROFICIENCY IN ENERGY MANAGEMENT

The administration and Board of Trustees of North Arkansas College (NAC) request approval to offer the Technical Certificate and Certificate of Proficiency in Energy Management, effective Fall 2024.

NAC is accredited by the Higher Learning Commission and the proposed program is within the role and scope established for the institution. The North Arkansas College Board of Trustees approved the program on February 8, 2024.

Program Description

Students enrolling in the proposed Energy Management program will explore energy auditing, renewable energy systems, energy-efficient building design, energy modeling, and energy codes and standards. Students will learn how to analyze energy usage data and develop energy management plans that can help reduce energy consumption and save costs. They will learn how to perform blower door and duct blasting tests; capture and interpret thermal imagery; install and service scaled solar, wind, and hydronic systems; and perform load calculations.

The proposed 17 credit-hour Certificate of Proficiency and 35 credit-hour Technical Certificate in Energy Management are designed to prepare students for an entry-level career in energy management, building science, and related fields, with a focus on sustainable practices and green technologies. The program will also focus on workforce training for local and regional businesses, partners, and contractors in the renewable energies industry. The proposed program will stack into the existing Associate of Applied Science in General Technology for those students wishing to further their education.

One part-time faculty member will be hired for the program. Existing resources and facilities will be utilized. Additional equipment will be acquired via donations, college funds, and future grants.

Program Need

Over the next 10 years, careers in the renewable energy industry are set to increase more than 3%, which exceeds most job growth projections for other skilled trades in Arkansas, Missouri, Oklahoma, and Texas. The demand for occupations in the renewable energy field is substantial, which shows how much businesses, industries, and individuals are dedicated to becoming energy independent. Wage projections indicate a median wage ranging from $38,000 to $53,000 or higher depending on the occupation chosen in this field.

North Arkansas College became aware of this need through national media coverage and by surveying related job markets in the HVAC and construction industries. One Arkansas company, Today's Building Science LLC, based out of Sherwood, has been involved in discussions about the proposed program since its inception and will provide curriculum guidance as well as employment opportunities for graduates of the proposed program. Additionally, First Star Energy has also expressed interest in employing future graduates.

Program Expenditures and Funding

One part-time faculty with 1-3 years of experience in energy management or related field and having one or more BPI, LEED, IREC, or HERS certifications will be hired in the summer of 2024. A salary of $20,600 is anticipated for this hire. Other expenditures include $5,000-$7,000 for faculty development, $75,000-$100,000 for solar panel and wind turbine training equipment, and approximately $2,500-$5,000 for facility renovations. Program accreditations will also be sought, and costs are estimated at $3,500-$4,500.

Funding for the proposed program will come from general revenue, possible Perkins funds and reserve funds, endowed chairs, and potential grants from Arkansas Advanced Energy Foundation (AAEF), the Office of Skills Development (OSD), and Arkansas Energy Department (AED).

Program Duplication

There are no other active programs similar to the proposed program in the state of Arkansas.

Program Learning Outcomes

<u>Certificate of Proficiency</u>

Upon successful completion, a student will be able to:

1. Demonstrate skills in the use of energy production, distribution, consumption, and efficiency, with a focus on high-performing building designs; solar, wind, and hydroelectric systems; and other renewable energy sources.
2. Demonstrate the ability to stay informed and embrace new and innovative solutions in the energy industry.
3. Identify economic, environmental, and social impacts of energy production and consumption, and the ability to evaluate the return on investment for various energy efficiency measures.
4. Demonstrate technical skills in building envelope design and construction, with a focus on energy efficiency, indoor air quality, and sustainability.
5. Describe the interrelationships between energy, the environment, and human well-being.
6. Present energy-related information to a variety of audiences.
7. Demonstrate technical skills in the use of HVAC-R (heating, ventilation, air conditioning, and refrigeration) systems and the ability to perform system assessments and design energy-efficient solutions.

Technical Certificate

Upon successful completion, a student will be able to:

1. Perform building envelope analysis, duct blasting, blower door testing, and other diagnostic procedures to evaluate a building's energy efficiency.
2. Demonstrate principles of the LEED (Leadership in Energy and Environmental Design), BPI (Building Performance Institute), RESNET (Residential Energy Services Network), and HERS (Home Energy Rating System) certification processes and the ability to evaluate a building’s compliance with energy codes and standards.
3. Complete LEED and BPI Certification Exams.
4. Demonstrate practical skills with data analytics, including the use of energy management software to track energy consumption and evaluate energy performance.
5. Demonstrate the ability to promote sustainable energy practices.
6. Communicate effectively about energy-related topics.
7. Work effectively in teams on energy projects
8. Demonstrate a knowledge of careers in the energy sector, including positions as energy analysts, auditors, consultants, managers, and renewable energy specialists, with a specific emphasis on high performing building designs and renewable energy systems.

Program Enrollment and Graduation Projections

Academic Year	Projected Enrollment	Projected Graduates
2024 - 2025	5	4
2025 - 2026	7	6
2026 - 2027	9	8
2027 - 2028	11	10
2028 - 2029	13	12

Program Curriculum

Certificate of Proficiency in Energy Management

ENGR 1003	*Intro to Energy Management*
ENGR 1124	*Energy Modeling*
ENGR 1123	*HVAC-R Systems*
ENGR 1103	*Building Science Fundamentals*
TECH 1013	Tech Math
TECH 1021	Industrial Safety

Italics = New Courses

Technical Certificate in Energy Management

ENGR 1003	*Intro to Energy Management*
ENGR 1124	*Energy Modeling*
ENGR 1123	*HVAC-R Systems*
ENGR 1103	*Building Science Fundamentals*
ENGR 2104	*Building Envelop Analysis*
ENGR 2204	*Renewable Energies and Sustainability*
ENGR 2223	*High Performance Building Design*
DVSC 2213	Data Analytics
HVAC 2202	Residential and Commercial Load Calculations
TECH 1013	Tech Math
TECH 1021	Industrial Safety
TECH 1102	Tech Communication

Italics = New Courses

ARKANSAS STATE UNIVERSITY NEWPORT
ASSOCIATE OF SCIENCE IN DATA SCIENCE-DATA ANALYTICS

The administration of Arkansas State University Newport (ASUN) and Board of Trustees of the Arkansas State University System request approval to offer the Associate of Science in Data Science – Data Analytics, effective Spring 2025.

ASUN is accredited by the Higher Learning Commission and the proposed program is within the role and scope established for the institution. The Arkansas State University System Board of Trustees approved the program on March 14, 2024.

Program Description

The proposed, fully online Associate of Science in Data Science – Data Analytics will equip students with the skills needed to navigate artificial intelligence, automation, and the rapid pace of technological advancement in order to make timely, data-driven decisions and improve business processes and outcomes, develop new products, and make strategic marketing decisions. This high wage, high-demand employment sector provides students with a positive outlook for employment prospects, internship and apprenticeship opportunities, and overall long-term program viability.

By joining the DART Data Science Ecosystem/Consortium, guided by the University of Arkansas Fayetteville (UAF), ASUN has full access to curriculum, resources, professional development, and training available under the umbrella of the consortium. The proposed program's curriculum consists of 68 credit hours and allows students to also earn a Certificate of General Education as they progress through the program. Upon approval of the proposed program, ASUN will sign a 2+2 agreement with the UAF and has had a verbal commitment for a 2+2 agreement with both Arkansas State University and Lyon College.

One faculty member will be hired to teach the program initially. As the program grows, additional faculty and adjunct faculty may be added in the future. Existing facilities, resources, and equipment will be utilized.

Program Need

Currently, there are 31 data scientists employed in the region and 1,088 data scientists employed statewide. With a 5-year annual growth rate average of 8.4% regionally and a statewide rate of 11.1%, the job future is promising for data scientists. Many data science positions have the capability of being performed remotely, which further expands the job market and opportunities within the region. The U.S. Bureau of Labor Statistics predicts employment in computer and information research scientists, in which Data Science resides, to increase 35% by 2032. The average annual wage of a data scientist in the region is $82,400 and $84,500 statewide.

ASUN first became aware of this need through conversations with a local employer. LifePlus approached ASUN about adding a data science program to meet local needs for employees with data analysis and programming capabilities.

Program Expenditures and Funding

One full-time, Masters-level faculty member will be hired for program implementation and will serve as lead instructor in the program. A $50,000 salary and $23,766 benefit package are anticipated. No other administrative costs will be incurred. Existing

resources, instructional equipment, facilities, and distance education capabilities will be utilized by the proposed program.

Funding for the proposed program will come from student tuition and fees and the reallocation of funds from the discontinuation of the AAS in Business Technology program.

Program Duplication

Currently, the University of Arkansas Monticello and North Arkansas College have Associate of Science programs in Data Science. Northwest Arkansas Community College currently offers a Data Science option under their Associate of Science in Liberal Arts and Sciences.

Arkansas State University offers a Certificate of Proficiency, a Bachelor of Science, and a Graduate Certificate in Data Science. ASUN's potential 2+2 agreement with Arkansas State University would complement ASU's offering in this field.

Program Learning Outcomes

Upon successful completion, a student will be able to:

1. Design, implement, and evaluate a data driven solution to meet a given set of stakeholder requirements in the context of the program's discipline involving the collection, representation, manipulation, storage, governance, security, modeling (descriptive, predictive, and prescriptive), and visualization of data.
2. Analyze a real-world problem facing industry, government, or society and apply principles of data science and other relevant disciplines to identify solutions.
3. Recognize professional responsibilities and make informed judgments in data science practice based on legal and ethical principles.
4. Apply critical thinking, problem identification, problem solving skills, theory, techniques, and tools throughout the data analysis lifecycle and employ the resulting knowledge to satisfy stakeholders' needs.
5. Function effectively as an entry-level member or participant on a multidisciplinary team engaged in activities appropriate to the program's discipline.
6. Communicate effectively (in written, verbal, technical, visual, and non-technical forms) in a variety of professional contexts and assist decision makers with the interpretation and implications of conclusions supported by data.

Program Enrollment and Graduation Projections

Academic Year	Projected Enrollment	Projected Graduates
2024 - 2025	20	
2025 - 2026	20	15
2026 - 2027	22	16
2027 - 2028	25	17
2028 - 2029	30	18

Program Curriculum

General Education – 42 credit hours
ENG 1003 Composition I
ENG 1013 Composition II
Lab Science Electives (8 credit hours)
MATH 1203 College Algebra
MATH 1054 Pre-Calculus Mathematics
MATH 2204 Calculus I
MATH 2214 Calculus II
SPCH 1203 Oral Communication
UNIV 1001 College and Life Skills
Choose one of the following:
ART 2503 Fine Arts Visual
MUS 2503 Fine Arts Musical
THEA 2503 Fine Arts Theatre
Choose one of the following:
HIST 2753 U.S. History to 1876
HIST 2773 U.S. History since 1876
POSC 2013 Introduction to American Government
Choose one of the following:
PSYC 2013 Introduction to Psychology
SOC 2213 Introduction to Sociology
DASC 2133 Data Privacy and Ethics
Data Science – 26 credit hours
DASC 1003 Introduction to Data Science
DASC 1104 Programming Languages for Data Science (R, Python)
DASC 1204 Intro to Object Oriented Programming for Data Science (JAVA)
DASC 2104 Data Structures and Algorithms
DASC 2113 Principles and Techniques of Data Science
DASC 2213 Data Visualization and Communication (Tableau)
DASC 2203 Data Management and Database
DASC 2223 Internship in Data Science OR
DASC 2225 Special Projects in Data Science
Italics = New Courses

SOUTHERN ARKANSAS UNIVERSITY TECH
ASSOCIATE OF SCIENCE IN DATA SCIENCE

The administration of Southern Arkansas University Tech (SAUT) and the Board of Trustees of the Southern Arkansas University System request approval to offer the Associate of Science in Data Science – Data Analytics, effective Fall 2024.

SAUT is accredited by the Higher Learning Commission and the proposed program is within the role and scope established for the institution. The Arkansas State University System Board of Trustees approved the program on March 14, 2024.

Program Description

The proposed, 62 credit-hour Associate of Science in Data Science program will prepare students with the necessary skills to identify, clean, transform, model, and present data to identify relationships, inform conclusions, and support decision making. The program will provide students with a comprehensive understanding of data science principles, tools, and techniques, equipping them with the skills necessary for a career in data analysis, data management, and related fields. The program will emphasize practical experience and interdisciplinary applications to prepare students for both immediate entry into the workforce and transfer to four-year institutions.

By joining the DART Data Science Ecosystem/Consortium, guided by the University of Arkansas Fayetteville (UAF), SAUT has full access to curriculum, resources, professional development, and training available under the umbrella of the consortium. The proposed program is designed to transfer seamlessly into UAF's Bachelor of Science in Data Science.

Program Need

Data science is experiencing rapid growth nationally and the demand for data science professionals is projected to continue growing as businesses increasingly rely on data to drive decision-making and innovation. According to various labor market reports and forecasts, data science jobs are among the fastest-growing roles in the technology sector, with significant expansion expected over the next decade.

Data Science education is crucial for South Arkansas due to its potential to drive economic development, enhance workforce skills, support local industries, and create job opportunities. By providing accessible, relevant training, the region can address skill gaps, attract businesses, and foster technological advancement. This investment in education not only supports individual career growth but also contributes to the broader economic and social development of South Arkansas.

Program Expenditures and Funding

There are no anticipated expenditures for the proposed program. Existing faculty, resources, equipment, facilities, and administrative support will be utilized.

Funding for the proposed program will come from student tuition and fees. No other sources of funding, such as grants or the reallocation of funds, will be used to support the offering of the proposed program.

Program Duplication

The University of Arkansas Monticello and North Arkansas College currently offer Associate of Science programs in Data Science. Northwest Arkansas Community College currently offers a Data Science option under their Associate of Science in Liberal Arts and Sciences.

Program Learning Outcomes

Upon successful completion, a student will:

1. Develop relative programming abilities.
2. Demonstrate proficiency with statistical analysis of data.
3. Develop the ability to build and assess data-based models.
4. Execute statistical analyses with professional statistical software.
5. Demonstrate skills in data management.

Program Enrollment and Graduation Projections

Academic Year	Projected Enrollment	Projected Graduates
2024 - 2025	4	
2025 - 2026	6	3
2026 - 2027	9	5
2027 - 2028	11	9
2028 - 2029	12	10

Program Curriculum

General Education – 26 credit hours
ENGL 1113 Composition I
ENGL 1123 Composition II
BIOL 1004 The Biological Sciences
CHEM 1114 General Chemistry
Choose 6 credit hours from ECON, GEOG, HIST, PSCI, PSYC, or SOC prefixes
Choose one of the following:
HIST 2013 U.S. History I OR
HIST 2023 U.S. History II OR
PSCI 2003 American National Government
Choose 3 credit hours from the following:

SPCH 1003 Principles of Speech OR
ART 2013 Art Appreciation OR
MUS 2013 Music Appreciation OR
ECON, GEOG, HIST, PSCI, PSYC, or SOC prefixes
Core Courses – 18 credit hours
CPSC 1004 Programming I
CPSC 1014 Programming II
MATH 1525 Calculus I
MATH 2015 Calculus II
Major Courses – 18 credit hours
DASC 1003 Introduction to Data Science
DASC 1223 Intermediate Data Science
DASC 2113 Principles and Techniques of Data Science
DASC 2213 Data Visualization and Communications
DASC 2203 Database Management Systems
DASC 2133 Data Privacy and Ethics
Italics = New Courses

UNIVERSITY OF ARKANSAS FOR MEDICAL SCIENCES
DOCTOR OF PHILOSOPHY IN ENVIRONMENTAL HEALTH SCIENCES

The administration of the University of Arkansas for Medical Sciences (UAMS) and Board of Trustees of the University of Arkansas System request approval to offer the Doctor of Philosophy in Environmental Health Sciences, effective Spring 2025.

UAMS is accredited by the Higher Learning Commission and the proposed program is within the role and scope established for the institution. The University of Arkansas System Board of Trustees approved the program on September 11-12, 2024.

Program Description

The proposed Doctor of Philosophy in Environmental Health Sciences will offer students advanced study in the field of environmental health science, or the study of how chemical, physical, and biological exposures cause adverse effects on individuals, communities, and the environment. The program will take a multidisciplinary approach to provide students with an advanced understanding of the impact of the environment on human health, how humans interact with the environment, and the importance of improving and maintaining healthy environments in communities and workplaces.

The proposed program will be comprised of 75 graduate credit hours, a candidacy exam, and a dissertation. The competency-based curriculum will emphasize exposure assessment of single or geospatial sources and lifestyle factors, pharmaceutical-induced toxicity, public health microbiology, and food safety. Students will gain experience conducting research in the field of environmental health science, drawing meaningful interpretations from the results, and publishing their research findings.

The proposed program will be offered at no cost to the student. Existing faculty, facilities, equipment, and resources will be utilized in the offering of the program.

Program Need

Environmental science is a key part of any comprehensive public health system. Constant population growth with increased urbanization and an endless need for natural resources have led to significant changes to local, national, and global environments. For responsible and sustainable development, it is essential to understand the potential adverse effects of modern society on the well-being of all Arkansans and their environment. To address these challenges, the proposed Ph.D. in Environmental Health Sciences will train the next generation of scientists with the skills needed to successfully investigate the impact of the environment on human health. Currently, there is no doctoral program in environmental health sciences in Arkansas. Therefore, Arkansas businesses and public employers must attract employees with doctoral degrees from out of state.

Labor market information provided by ADHE forecasts for the next 10 years a steady need of 30+ trained environmental specialists per year. The current average annual salary for an environmental specialist is $71,600, which is 1.8 times higher than the mean salary in Arkansas. Salaries are expected to increase annually by 2% to an average of $77,500 by 2030.

Program Expenditures and Funding

No additional costs are anticipated for the offering of the proposed program. All of the courses required for this program are currently being taught in the College of Public Health or the College of Medicine. Administrative costs for the program will be nominal. The proposed program will utilize existing facilities and equipment, including classroom space, computer equipment, and computing and storage servers.

For administrative purposes, the student/program/mentor teams will be required to cover tuition and student fees. In practice, the program will provide funds for the first 2 years for tuition, fees, and the student stipend. After the student has chosen a primary advisor, the advisor will provide funds for the student's stipend and tuition and fees from extramural funds for the duration of the time needed to complete all degree requirements.

Program Duplication

There are no other active programs similar to the proposed program in the state of Arkansas.

Program Learning Outcomes

Upon successful completion, a student will be able to:

1. Select and defend risk mitigation strategies in a specific scenario

2. Critique research in environmental health or related disciplines
3. Select and defend methods selection in environmental exposure studies
4. Synthesize and communicate scientific results
5. Formulate a hypothesis and testable aims to address an environmental health-related issue

Program Enrollment and Graduation Projections

Academic Year	Projected Enrollment	Projected Graduates
2024 - 2025	2	
2025 - 2026	4	
2026 - 2027	6	
2027 - 2028	4-6	1-2
2028 - 2029	5-7	2-4

Program Curriculum

Core Courses – 14 credit hours
PBHL 50033 Introduction to Public Health
ENVH 51103 Environmental Health Sciences
ENVH 62103 Applied Knowledge in Environmental Health
ENVH 63003 Principles of Toxicology for Public Health
ENVH 63001 Environmental Health Sciences Seminar (2 credit hours)
Fundamental Biological Sciences – 9 credit hours
NBDS 51033 Cell Biology
PHYO 51093 Gene Expression
BIOC 51033 Biochemistry and Molecular Biology
Scientific Communication – 9 credit hours
PCOL 51171 Scientific Communication and Ethics I
PCOL 51191 Scientific Communication and Ethics II
HBHE 64363 Communication for Public Health Leaders
PBHL 64373 Grantsmanship and the Peer Review Process
IBSD 5110V Seminar (1 credit hour)
Research Methodology – 10 credit hours
PBHL 64381 Fundamentals of Research
BIOS 50133 Biostatistics I
BIOS 62133 Biostatistics II
ENVH 64103 Geographic Information Systems in Public Health
Electives – 3 credit hours, choose one of the following:
EPID 51103 Epidemiology I
EPID 63243 Genomic/Genetic Epidemiology
EPID 63353 Molecular Epidemiology
ENVH 53103 Climate Change and Public Health
ENVH 54003 Public Health Microbiology
Pre-candidacy Research – 12 credit hours
ENVH 6601V Environmental Health Science Research

Dissertation Research – 18 credit hours
PBHL 6999V Dissertation Research

UNIVERSITY OF ARKANSAS MONTICELLO
ROLE AND SCOPE CHANGE
DOCTOR OF PHILOSOPHY IN FOREST RESOURCES

Role and Scope Review Process
Arkansas Higher Education Coordinating Board (AHECB) policy outlines the process institutions must follow in order to request a change in the degree level approved by the AHECB, and the process to be followed during the review and consideration of that request. The process for AHECB consideration and action was amended by the Coordinating Board at its meeting on April 25, 2014.

Role and Scope Change Review
The University of Arkansas at Monticello (UAM) proposes a change to its role and scope to include the offering of doctoral programs with the Doctor of Philosophy in Forest Resources as its inaugural program. UAM is uniquely positioned to offer this degree as the only four-year institution in Arkansas with a Forestry program. UAM's program offerings currently include degrees in Forestry at the Associate, Bachelor, and Master levels.

Program Description
The proposed Doctor of Philosophy in Forest Resources will increase the state's forestry and natural resources scientific workforce, and importantly, do so through applied, in-depth education and research on Arkansas forestry and natural resource issues. Given that Arkansas has never offered a Ph.D. in forest resources, it has been entirely reliant on doctoral programs of other states. This doctoral program will be offered by UAM's College of Forestry, Agriculture, and Natural Resources (CFANR). The CFANR also houses the Arkansas Forest Resources Center of the University of Arkansas System Division of Agriculture which provides funding for research that bolsters the ability of the CFANR to deliver the program.

The proposed Ph.D. in Forest Resources will require 72 post-baccalaureate credit hours, of which a minimum of 48 hours will be coursework and up to 24 hours of credit for research/dissertation preparation and defense. Additionally, the degree requirements include the completion of an entrance seminar, comprehensive exams, a dissertation, one semester of instruction of a lower-level undergraduate course or lab, and a dissertation defense. Over the first five years, UAM expects to enroll at least fourteen students into the proposed doctoral program.

Existing resources, facilities, research equipment, and funding will be used to support the offering of this proposed doctoral program. No new faculty will be required as the CFANR has 20 faculty members with diverse expertise in forestry, wildlife ecology, ecology, economics, and biometrics to deliver this program.

Program Need
For the past several decades, forests and the forest industry have contributed substantially to the economic well-being of rural Arkansas and have had a significant cultural influence. Arkansas is the second most timber dependent economy among states in the U.S. and the most timber dependent economy in the southern United States. Arkansas has been completely reliant on Ph.D. programs in forest resources from other states to supply its forestry and natural resources scientific workforce.

UAM has become increasingly aware of this need and demand through direct contacts from the forestry industry and the institution's supporters in the Forestry Caucus of the Arkansas state legislature. The institution has also become aware through its increasing challenges in filling positions requiring a Ph.D. in forest resources for its own program, and frequent contacts from peer universities and agencies at the federal and state seeking graduates of Ph.D. in Forest Resources programs.

Labor market information provided by ADHE indicated that forestry and conservation post-secondary teaching positions, research and development careers in life sciences, and professional scientific technical services as career paths associated with graduates with a Doctor of Philosophy in Forest Resources. Each of these career paths are anticipated to have approximately 1% annual job growth at the state and national levels over the next 10 years. Average salaries range from $76,000 to $82,000. This salary range is 12-19% higher than the national salary average and 46-58% higher than the Arkansas salary average, according to the 2023 Arkansas Labor Market and Economic Report.

Program Expenditure and Funding
No new costs are associated with the offering of the proposed program. Administrative, instructional, and faculty resources used to deliver current programs in natural resources management, forestry, agriculture, and wildlife management are adequate for delivery of the proposed program.

Tuition and fees from students will be the key source of funding for the program. Additionally, UAM has received a $16.8 million appropriation from the Arkansas legislature for the construction of the Arkansas Forest Health Research Center, under the CFANR and the Arkansas Forest Resources Center of the U of A System Division of Agriculture. The CFANR/Arkansas Forest Resources Center has also recently joined the Southeast Climate Adaptation Science Center, a consortium of universities of the Southeast U.S. that receives recurring funding from U.S. Geologic Survey for forestry and wildlife research and outreach responding to climate trends. This membership enhances the unit's funding opportunities for Ph.D. assistantships in service of this program.

Program Duplication
There are no other active programs similar to the proposed program in the state of Arkansas.

Program Learning Outcomes
Upon completion, a graduate should:

1. Have an advanced understanding of principles relating to forest sciences, natural resource management, spatial sciences, or wildlife ecology and management.
2. Have an advanced understanding of natural resource issues and topics pertinent to an individual's program of study and career goals and be able to apply this knowledge in the decision-making process.
3. Be able to apply the scientific method in designing, implementing, analyzing, interpreting and integrating studies related to forest resource management problems and issues.
4. Be able to communicate effectively using written and oral communication skills in technical and non-technical settings.
5. Have excellent decision-making and critical thinking skills.

Program Enrollment and Graduation Projections

Academic Year	Projected Enrollment	Projected Graduates
2025 - 2026	2	
2026 - 2027	5	
2027 - 2028	7	
2028 - 2029	11	2
2029 - 2030	13	5

Program Curriculum

Required Courses – 9 credit hours
NREM 51003 Research Methods in Natural Resources
NREM 51103 Applied Predictive Statistics
NREM 51203 Applied Comparative Statistics
Electives Courses – 39 credit hours from the following
NREM 5020V Special Topics (variable credit)
NREM 50303 Applications in Recreational Farm Management
NREM 51303 Decision Making in Natural Resources Management
NREM 51403 Recreational Land & Lodge Management
NREM 52003 Social Aspects of Natural Resource Management
NREM 52203 Natural Resources Ecology
NREM 52403 Wetlands Ecology and Management
NREM 52903 Contemporary Issues in Natural Resource Conservation
NREM 5790V Research and Thesis (variable credit)
NREM 5890V Independent Study in Natural Resources (variable credit)
NREM 51603 Advanced GIS
NREM 51003 Forest Finance
NREM 52003 Forest Operations and Supply Chain Management
NREM 50603 Forest Appraisals
NREM 54003 Leadership in a Forest Business

NREM 5980V	Independent Study in Forest Business
NREM 53003	Forest Products Marketing
NREM 55003	Life Cycle Assessment of Forest Products
NREM 5XXX3	*Forest Economics and Modeling*
NREM 5XXX3	*Forest Business and Human Resources*
NREM 5XXX3	*Forest Taxes*
NREM 5XXX3	*Forest Business Legal Issues*
NREM 5XXX3	*Forest Operations Research*
NREM 5XXX3	*Data Analysis for Forest Business*
NREM 5XXX4	*Advanced Silviculture*
NREM 5XXX3	*Forest Ecology and Tree Ecophysiology*
NREM 5XXX3	*Advanced Forest Management*
BIOL 50134	Waterfowl Ecology
BIOL 50234	Herpetology for Graduate Students
BIOL 51434	Mammalogy for Graduate Students
BIOL 53434	Ornithology
SPCH 50003	Advanced Argumentation & Debate
SPCH 51103	Professional Behavior
STAN 52103	Critical & Textual Research Methods
STAN 53803	Research Methods for Forensics
STAN 54103	Qualitative Research Methods
STAN 54203	Quantitative Research Methods
COMM 5905V	Special Topics (variable credit)
COMM 5995V	Independent Study (variable credit)

Additional Requirements

Completion of the following:

1. Entrance Seminar
2. Instruction of a lab or course for undergraduate course for one semester
3. Comprehensive written and oral candidacy exams
4. Dissertation
5. Dissertation defense and exit seminar

Italics = New Courses

OUT-OF-STATE AND ARKANSAS PRIVATE INSTITUTIONS

The following applications may be reviewed by ADHE for possible consideration at the AHECB meeting in October 2024.

Initial Certifications – Distance Technology

AMDA College of the Performing Arts, Los Angeles, California
Bachelor of Fine Arts in Acting
Bachelor of Fine Arts in Musical Theatre

Hannibal-LaGrange University, Hannibal, Missouri
Bachelor of Science in Education
Master of Science in Education

Pepperdine University, Malibu, California
Master of Science in Education

University of California, Davis, Davis, California
Master of Management

University of Southern California, Los Angeles, California
Master of Education in Postsecondary Administration and Student Affairs
Master of Science in Analytics
Master of Social Work: Advanced Standing

Walden University, Minneapolis, Minnesota
Initial Certification – Distance Technology
Master of Science in Clinical Mental Health Counseling and Master of Science in School Counseling – Dual Degree