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NAVAJO TECHNICAL UNIVERSITY

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Program Goals / Student Learning Outcomes

School of Applied Technology

Automotive Technology, AAS

Upon successful completion of the Program, the student will:

1. Demonstrate skills in suspension and steering repair.
2. Demonstrate skills in brake repair.
3. Demonstrate skills in electrical/electronic systems repair.
4. Demonstrate skills in engine performance.
5. Demonstrate skills in engine repair.
6. Demonstrate skills in heating and air conditioning systems repair.
7. Demonstrate skills in automatic transmission/transaxle repair
8. Demonstrate skills in manual transmission repair.

Commercial Driver's License, Cert

Upon successful completion of the Program, the student will:

1. Demonstrate general knowledge of vehicle management systems, dashboard, gauges and basic electricals
2. Perform pre-trip vehicle inspection, pre-trip backing, and parallel parking skills.
3. Identify potential hazards in driver wellness.
4. Drive in traffic within city limits.
5. Translate Department of Transportation Regulations.
6. Obtain a Class A Commercial Driver's License

Construction Technology, Cert and AAS

Upon successful completion of the Program, the student will:

1. Demonstrate basic safety.
2. Build floor systems
3. Build wall systems.
4. Build ceiling, joists, and roof frames.
5. Build a masonry wall.

Electrical Trades, Certificate

Upon successful completion of the Program, the student will:

1. Retain understanding of trade terms and symbols
2. Complete unit-based performance tasks
3. Apply knowledge of math and electrical theory
4. Complete a commercial wiring capstone project

5. Write a professional resume.
6. Demonstrate safety.

Energy Systems, AAS

Upon successful completion of the Program, the student will:

1. Demonstrate and maintain a safe working environment according to OSHA 1910 General industry regulations & standards and OSHA 1926 construction industry regulations & standards
2. Demonstrate understanding of renewable and non-renewable energy sources, and how they relate to various applications
3. Demonstrate understanding of wind and solar site assessment, design and installation
4. Demonstrate Balance of Systems design and installation and troubleshooting
5. Write a project/research report
6. Develop a presentation.

Plumbing, Certificate

Upon successful completion of the Program, the student will:

1. Install fixtures, faucets, plastic pipe and fittings, and drain/waste/vent systems
2. Read blueprints.
3. Install copper and iron pipe and fittings
4. Demonstrate proper installation techniques for plumbing fixtures, drain, waste, and venting systems.

Welding Technology Certificate

Upon successful completion of the Program, the student will:

1. Demonstrate safety
2. Demonstrate oxy-fuel cutting and welding
3. Shielded Metal Arc Welding (SMAW) process
4. Produce discontinuity-free welds on pipe using SMAW
5. Welding Qualification

School of Arts & Humanities

Counseling, AA

Upon successful completion of the Program, the student will:

1. Analyze frameworks.
2. Assess clients.
3. Develop intervention plans.
4. Role-play treatment situations.
5. Demonstrate DPE values.

Creative Writing, BFA

Upon successful completion of the Program, the student will:

1. Develop skills of craft and expression in different genres
2. Compose creative works in various genres and forms
3. Provide feedback to peers
4. Critically evaluate and reflect
5. Revise creative work
6. Communicate clearly

Diné Culture, Language, and Leadership, B.A.

Upon successful completion of the Program, the student will:

1. Communicate in Navajo (ACTFL Speaking: Novice High) and in English (ACTFL Speaking: Advanced Low)
2. Develop and fully support thesis ideas
3. Publish non-academic texts for NTU audiences (children's stories, biographical profiles, interviews, oral histories, newsletters, jokes)
4. Apply understandings of one or more sub-areas of Navajo linguistics to address language learning challenges
5. Implement team-based language learning projects
6. Develop a B.A. thesis paper with program portfolio

Early Childhood Multicultural Education A.S.

1. Students will be able to understand child development and learning across multicultural education settings
2. Students will be able to establish collaborative Family-Teacher Partnerships and Community Connections across multicultural education setting
3. Students will be able to perform Child Observation, capture Documentation and create Assessments across multicultural education settings
4. Students will be able to implement Developmentally, Culturally and Linguistically Appropriate Teaching Practices across multicultural education settings
5. Students will be able to integrate academic content knowledge in the Early Childhood Curriculum across multicultural education settings
6. Students will be able to demonstrate Professionalism as an Early Childhood Educator across multicultural education settings

General Studies, A.A.

Upon successful completion of the Program, the student will:

1. Demonstrate effective communication strategies in both oral and written communication by writing a paper and presenting their paper orally in class
2. Apply logic and reasoning to solve a problem

3. Write a paper that identifies ways in which culture and history affect one's present and future, both locally and globally
4. Research critical issues confronting the individual and society, *e.g.* ethical decision-making, civic engagement, professional responsibility, and write a research paper summarizing their findings
5. Demonstrate knowledge of DPE values by crafting a presentation related to DPE

Law Advocate, A.A.S.

Upon successful completion of the Program, the student will:

1. Demonstrate familiarity with Navajo Nation substantive law.
2. Demonstrate familiarity with Fundamental Law of the Diné People
3. Analyze client needs.
4. Write effective legal pleadings
5. Make formal court arguments.
6. Demonstrate professionalism.

Law Advocate, B.A.

Upon successful completion of the Program, the student will:

1. Demonstrate knowledge in areas of Navajo Nation substantive and procedural law
2. Comprehend and apply legal theories, procedural rules, and laws applicable to the Navajo Nation
3. Compose and formulate effective legal pleadings
4. Evaluate and construct formal legal arguments
5. Apply Navajo legal skills necessary to practice law in the Navajo Nation

Law Enforcement, Certificate

Upon successful completion of the Program, the student will:

1. Demonstrate an understanding of the methods used by the criminal justice system to process and sanction criminal offenders
2. Critically assess law enforcement agency policies in relation to Constitutional protections
3. Utilize a working knowledge of tribal, state, and federal criminal laws and court systems
4. Demonstrate an understanding of the points of conflict between law enforcement and American society
5. Demonstrate a familiarity with the history of law enforcement and the status of current reform efforts
6. Demonstrate an understanding of ethical considerations in law enforcement

School of Business

Accounting, A.A.S.

Upon successful completion of the Program, the student will:

1. Demonstrate familiarity with accounting standards and regulations
2. Prepare financial reports
3. Demonstrate technical expertise
4. Demonstrate professionalism

Accounting, B.S.

Upon successful completion of the Program, the student will:

1. Demonstrate an understanding of accounting principles to launch a professional career
2. Apply critical and analytical decision-making skills to accounting issues
3. Communicate effectively in professional contexts
4. Recognize ethical and legal issues facing accounting professional
5. Use effectively emerging information technology in accounting and business
6. Demonstrate an understanding of business processes, strategies, and current events in the national and global business environment

Administrative Office Specialist, A.A.S.

Upon successful completion of the Program, the student will:

1. Operate office technology
2. Produce office documents
3. Design advanced document formatting
4. Accounting simulation for single proprietorship
5. Integrate theory and practice

Business Administration, B.A.

SLO 1: Global Business - Students will be able to synthesize core and global business disciplines to formulate strategic solutions for complex organizational challenges.

SLO 2: Financial Analysis - Students will be able to analyze financial data, forecasts, and economic indicators to predict plans and solve problems related to organizational performance and sustainability.

SLO 3: Integrated Business Planning - Students will be able to design a comprehensive business plan to generate a viable strategy for new or existing business.

SLO 4: Professional Communication - Students will be able to produce professional business reports and oral presentations to communicate strategic information to diverse stakeholders.

SLO 5: Ethical & Cultural Leadership - Students will be able to evaluate business dilemmas using the Dine Philosophy of Education to justify ethical decisions rooted in cultural sovereignty and community integrity.

SLO 6: Experiential Management - Students will be able to demonstrate professional competencies through an internship or hands-on application to bridge theoretical knowledge with workplace practice.

Public Administration, A.A.S.

Upon successful completion of the Program, the student will:

1. Become familiar with the social forces that affect the creation of public policies
2. Participate in a policy analysis
3. Develop an oral presentation
4. Analyze, synthesize, think critically, solve problems, and make decisions
5. Write effectively

School of Culinary Arts, Hospitality and Tourism

Professional Baking, A.A.S.

Upon successful completion of the Program, the student will:

1. Demonstrate essential baking competencies
2. Prepare a variety of desserts
3. Perform math calculations related to professional baking
4. Demonstrate baking management skills
5. Discuss professional ethics related to professional baking

Hotel and Restaurant Management Administration, B.A.S.

Upon successful completion of the Program, the student will:

1. Demonstrate familiarity with business theories and models
2. Write a report
3. Develop an oral presentation
4. Analyze financial data
5. Develop a business plan
6. Demonstrate professionalism

School of Engineering, Math and technology

Advanced Manufacturing Engineering Technology, B.A.S.

Upon successful completion of the Program, the student will:

1. Solve basic mechanical/structural/ manufacturing engineering problems.
2. Conduct team presentations
3. Demonstrate professionalism based on Diné cultural principles

Building Information Technology, A.A.S.

Upon successful completion of the Program, the student will:

1. Produce 2D drawings
2. Create 3D models
3. Demonstrate knowledge of international building codes and standards
4. Develop project plans and budgets
5. Collaborate on teams

Chemical Engineering, A.A.S.

1. An ability to apply knowledge, techniques, skills and modern tools of mathematics, science, engineering, and technology to solve well-defined engineering problems appropriate to the discipline
2. An ability to design solutions for well-defined technical problems and assist with the engineering design of systems, components, or processes appropriate to the discipline
3. An ability to apply written, oral, and graphical communication in well-defined technical and non-technical environments; and an ability to identify and use appropriate technical literature
4. An ability to conduct standard tests, measurements, and experiments and to analyze and interpret the results
5. An ability to function effectively as a member of a technical team

Civil Engineering, B.S.

1. An ability to identify, formulate, and solve complex engineering problems by applying principles of engineering, science, and mathematics
2. An ability to apply engineering design to produce solutions that meet specified needs with consideration of public health, safety, and welfare, as well as global, cultural, social, environmental, and economic factors
3. An ability to communicate effectively with a range of audiences
4. An ability to recognize ethical and professional responsibilities in engineering situations and make informed judgments, which must consider the impact of engineering solutions in global, economic, environmental, and societal contexts
5. An ability to function effectively on a team whose members together provide leadership, create a collaborative and inclusive environment, establish goals, plan tasks, and meet objectives
6. An ability to develop and conduct appropriate experimentation, analyze and interpret data, and use engineering judgment to draw conclusions
7. An ability to acquire and apply new knowledge as needed, using appropriate learning strategies

Computer Science, A.S.

Upon successful completion of the Program, the student will:

1. Write sequential programs.
2. Design solutions to computer-related problems
3. Develop a technical presentation

Computer Science, B.S.

Upon successful completion of the Program, the student will:

1. Analyze a complex computing problem and apply principles of computing and other relevant disciplines to identify solutions. (ABET SLO #1)
2. Design, implement, and evaluate a computing-based solution to meet a given set of computing requirements in the context of the program's discipline. (ABET SLO #2)
3. Communicate effectively in a variety of professional contexts. (ABET SLO #3)
4. Recognize professional responsibilities and make informed judgments in computing practice based on legal and ethical principles. (ABET SLO #4)
5. Function effectively as a member or leader of a team engaged in activities appropriate to the program's discipline. (ABET SLO #5)
6. Apply computer science theory and software development fundamentals to produce computing-based solutions

Cybersecurity, A.A.S

Upon successful completion of the Program, the student will be able to:

1. Analyze a broadly defined security problem and apply principles of cybersecurity to the design and implementation of solutions
2. Apply security principles and practices to maintain operations in the presence of risks and threats
3. Communicate effectively in a variety of professional contexts
4. Recognize professional responsibilities and make informed judgments in cybersecurity practice based on legal and ethical principles
5. Function effectively as a member of a team engaged in cybersecurity activities
6. Apply computer science theory and software development fundamentals to produce computing-based solutions

Electrical Engineering, B.S.

1. An ability to identify, formulate, and solve complex engineering problems by applying principles of engineering, science, and mathematics
2. An ability to apply engineering design to produce solutions that meet specified needs with consideration of public health, safety, and welfare, as well as global, cultural, social, environmental, and economic factors
3. An ability to communicate effectively with a range of audiences
4. An ability to recognize ethical and professional responsibilities in engineering situations and make informed judgments, which must consider the impact of engineering solutions in global, economic, environmental, and societal contexts
5. An ability to function effectively on a team whose members together provide leadership, create a collaborative and inclusive environment, establish goals, plan tasks, and meet objectives
6. An ability to develop and conduct appropriate experimentation, analyze, and interpret data, and use engineering judgment to draw conclusions

7. An ability to acquire and apply new knowledge as needed, using appropriate learning strategies

Engineering Technician, Certificate

Upon successful completion of the Program, the student will be able to:

1. Solve basic Engineering Technology problems based on smart and critical thinking
2. Conduct teamwork & individual work
3. Demonstrate professionalism based on Diné cultural principles

Engineering Technology, A.A.S.

Upon successful completion of the Program, the student will be able to:

1. Apply knowledge, techniques, skills and modern tools of mathematics, science, engineering, and technology to solve well-defined engineering problems appropriate to the discipline (ABET SLO #1)
2. Design solutions for well-defined technical problems and assist with the engineering design of systems, components, or processes appropriate to the discipline (ABET SLO #2)
3. Apply written, oral, and graphical communication in well-defined technical and non-technical environments; and an ability to identify and use appropriate technical literature (ABET SLO #3)
4. Conduct standard tests, measurements, and experiments and analyze and interpret the results (ABET SLO #4)
5. Function effectively as a member of a technical team (ABET SLO #5)

Environmental Engineering, B.S.

1. An ability to identify, formulate, and solve complex engineering problems by applying principles of engineering, science, and mathematics
2. An ability to apply engineering design to produce solutions that meet specified needs with consideration of public health, safety, and welfare, as well as global, cultural, social, environmental, and economic factors
3. An ability to communicate effectively with a range of audiences
4. An ability to recognize ethical and professional responsibilities in engineering situations and make informed judgments, which must consider the impact of engineering solutions in global, economic, environmental, and societal contexts
5. An ability to function effectively on a team whose members together provide leadership, create a collaborative and inclusive environment, establish goals, plan tasks, and meet objectives
6. An ability to develop and conduct appropriate experimentation, analyze, and interpret data, and use engineering judgment to draw conclusions

7. An ability to acquire and apply new knowledge as needed, using appropriate learning strategies

Geographic Information Technology, Cert/AAS

1. Students will be able to apply cartographic principles of scale, resolution, projection, data management, and spatial analysis to a geographic nature using a geographic information system
2. Students will be able to plan, evaluate, and execute an original geographic information technology project
3. Students will be able to demonstrate the ability to communicate orally, in writing and graphically, the outcome of geographic information analysis
4. Students will be able to demonstrate an awareness of professional obligations to society, employers and funders, and individuals.

Industrial Engineering, B.S.

1. An ability to identify, formulate, and solve complex engineering problems by applying principles of engineering, science, and mathematics
2. An ability to apply engineering design to produce solutions that meet specified needs with consideration of public health, safety, and welfare, as well as global, cultural, social, environmental, and economic factors
3. An ability to communicate effectively with a range of audiences
4. An ability to recognize ethical and professional responsibilities in engineering situations and make informed judgments, which must consider the impact of engineering solutions in global, economic, environmental, and societal contexts
5. An ability to function effectively on a team whose members together provide leadership, create a collaborative and inclusive environment, establish goals, plan tasks, and meet objectives
6. An ability to develop and conduct appropriate experimentation, analyze, and interpret data, and use engineering judgment to draw conclusions
7. An ability to acquire and apply new knowledge as needed, using appropriate learning strategies

Information Technology, B.A.S.

Upon successful completion of the Program, the student will be able to:

1. Analyze a complex computing problem and apply principles of computing and other relevant disciplines to identify solutions. (ABET SLO #1)
2. Troubleshoot programming problems
3. Design, implement, and evaluate a computing-based solution to meet a given set of computing requirements in the context of the program's discipline. (ABET SLO #2)
4. Communicate effectively in a variety of professional contexts. (ABET SLO #3)

5. Recognize professional responsibilities and make informed judgments in computing practice based on legal and ethical principles. (ABET SLO #4)
6. Function effectively as a member or leader of a team engaged in activities appropriate to the program's discipline. (ABET SLO #5)
7. Use systemic approaches to select, develop, apply, integrate, and administer secure computing technologies to accomplish user goals. (ABET SLO #6)
8. Use systemic approaches to select, develop, apply, integrate, and administer secure computing technologies to accomplish user goals. (ABET SLO #6)

Mathematics, A.S.

Upon successful completion of the Program, the student will be able to:

1. Demonstrate knowledge of math foundations and context
2. Perform computations in higher mathematics
3. Formulate complete, concise, and correct mathematical proofs
4. Solve real world math related problems
5. Use technology to address mathematical ideas

Mechanical Engineering, BAS

1. An ability to identify, formulate, and solve complex engineering problems by applying principles of engineering, science, and mathematics
2. An ability to apply engineering design to produce solutions that meet specified needs with consideration of public health, safety, and welfare, as well as global, cultural, social, environmental, and economic factors
3. An ability to communicate effectively with a range of audiences
4. An ability to recognize ethical and professional responsibilities in engineering situations and make informed judgments, which must consider the impact of engineering solutions in global, economic, environmental, and societal contexts
5. An ability to function effectively on a team whose members together provide leadership, create a collaborative and inclusive environment, establish goals, plan tasks, and meet objectives
6. An ability to develop and conduct appropriate experimentation, analyze, and interpret data, and use engineering judgment to draw conclusions
7. An ability to acquire and apply new knowledge as needed, using appropriate learning strategies

New Media, B.S.

Upon successful completion of the Program, the student will be able to:

1. Use digital media to communicate written, oral, and visual information
2. Demonstrate strong familiarity and proficiency with professional software for video editing, audio production, and editing, basic animation, and web development

3. Demonstrate understanding and competency with the production pipeline
4. Solve industry-related problems in real-world projects and in collaboration with other students
5. Carry out applied learning activities focused on the production and post-production process for digital media productions.
6. Produce a professional portfolio in new media

Secondary Mathematics, B.S.

Upon successful completion of the Program, the student will be able to:

1. Demonstrate strong knowledge of mathematics content and context
2. Integrate the use of technology and software appropriate to the teaching and learning situation
3. Design lesson plans and apply teaching techniques and pedagogy to deliver effective instruction
4. Organize and manage the classroom for developmentally appropriate learning and to maintain an effective learning environment taking into consideration individual and cultural differences
5. Compare and use various assessment techniques means of mathematical instruction and measure of student outcomes
6. Apply national and state standards for mathematics education to develop content appropriate lessons
7. Prepare the graduates for the Teaching Exam and Certification

School of Science

Animal Science, B.S.

Upon successful completion of the Program, the student will be able to:

1. Achieve knowledge of different livestock animals based on anatomy, nutrition, genetics, and reproduction
2. Apply field and laboratory procedures and communicate results in oral and written forms
3. Maintain animal data records for production
4. Care for livestock using appropriate and humane handling procedures along with basic first aid if needed
5. Develop and maintain safety protocols and procedures within the work environment
6. Develop a strong work ethic and professionalism

Biology, B.S.

Upon successful completion of the Program, the student will be able to:

1. Demonstrate familiarity with essential biology concepts
2. Write a lab report
3. Conduct a research project

4. Produce a conference/workshop presentation
5. Demonstrate confidence and competence as a biological scientist

Chemistry, B.S.

Upon successful completion of the Program, the student will be able to:

1. Write a lab report.
2. Present a short oral presentation
3. Collaborate productively in an academic setting
4. Write a research paper
5. Solve challenging problems relevant to our society
6. Produce a capstone project and communicate the results effectively

Environmental Science & Natural Resources, B.S.

Upon successful completion of the Program, the student will be able to:

1. Write research papers with correct scientific documentation and organization
2. Conduct an oral presentation using applicable software and presentation media (PowerPoint, YouTube, Prezi, and any number options).
3. Write lab reports, either field based or in the classroom, using a field notebook creating a cumulative portfolio
4. Demonstrate professional accountability

Registered Nursing, AAS

Upon successful completion of the Program, the student will:

1. Engage in professional nursing practice that is patient-centered and culturally appropriate for individuals, families, and communities
2. Integrate principles of quality improvement and safety into nursing practice within healthcare organizations and systems
3. Deliver nursing care that is evidence-based across the lifespan
4. Demonstrate leadership behaviors through the application of policies that apply to healthcare delivery.
5. Engage in effective interprofessional collaboration in the delivery of healthcare for quality patient outcomes
6. Utilize technologies for the management of information and in the delivery of patient care

Nursing Assistant, Certificate

Upon successful completion of the Program, the student will be able to:

1. Demonstrate familiarity with healthcare concepts
2. Perform nursing skills and technique
3. Demonstrate Professionalism

Veterinary Technology, A.A.S.

Upon successful completion of the Program, the student will be able to:

1. Prepare for a surgical procedure.
2. Calculate medication and create labels
3. Perform an oral exam and dental prophylaxis
4. Perform a laboratory or diagnostic procedure
5. Perform a patient assessment and nursing procedure
6. Monitor a patient in all stages of anesthesia and assess need for analgesia

School of Graduate Studies**Diné Studies M.A.**

Upon successful completion of the Program, the student will be able to:

1. Communicate in Navajo (ACTFL Speaking: Intermediate High) and in English (ACTFL Speaking: Advanced Mid).
2. Write effective reviews in referred journals
3. Publish non-academic texts for local and tribal audiences in the Navajo Times
4. Apply understandings of sub-areas of Navajo linguistics to address language and culture revitalization challenges
5. Lead community-based projects
6. Develop an M.A. thesis paper with portfolio

Electrical Engineering, M.S.

1. An ability to identify, formulate, and solve complex engineering problems by applying principles of engineering, science, and mathematics
2. An ability to apply engineering design to produce solutions that meet specified needs with consideration of public health, safety, welfare, and global, cultural, social, environmental, and economic factors
3. An ability to communicate effectively with a range of audiences
4. An ability to recognize ethical and professional responsibilities in engineering situations and make informed judgments considering global, economic, environmental, and societal contexts.
5. An ability to function effectively on a team whose members together provide leadership, create a collaborative and inclusive environment, establish goals, plan tasks, and meet objectives.
6. An ability to develop and conduct appropriate experimentation, analyze and interpret data, and use engineering judgment to draw conclusions
7. An ability to acquire and apply new knowledge as needed using appropriate learning strategies.

Industrial Engineering, M.S.

1. An ability to identify, formulate, and solve complex engineering problems by applying principles of engineering, science, and mathematics
2. An ability to apply engineering design to produce solutions that meet specified needs with consideration of public health, safety, welfare, and global, cultural, social, environmental, and economic factors
3. An ability to communicate effectively with a range of audiences
4. An ability to recognize ethical and professional responsibilities in engineering situations and make informed judgments considering global, economic, environmental, and societal contexts.
5. An ability to function effectively on a team whose members together provide leadership, create a collaborative and inclusive environment, establish goals, plan tasks, and meet objectives.
6. An ability to develop and conduct appropriate experimentation, analyze and interpret data, and use engineering judgment to draw conclusions
7. An ability to acquire and apply new knowledge as needed using appropriate learning strategies.

Management Information Systems, M.S.

Upon successful completion of the Program, the student will be able to:

1. Design policies and standards for business continuity and information assurance. (SLO #1)
2. Analyze the needs of a domain and determine how those needs can best be addressed with data, information, and content management solutions. (SLO #2)
3. Develop a plan to exploit new and emerging technologies for new purposes in an organization. (SLO #3)
4. Design and implement architecture for organizational data processing and system solutions using internal hardware resources and external service solutions. (SLO #4)
5. Apply professional management skills to the design and management of an effective organization. (SLO #5)

Ph.D. in Dine' Culture and Language Sustainability

Upon successful completion of the Program, the student will be able to:

1. Communicate effectively in Navajo (ACTFL Speaking: Advanced Mid) and in English (ACTFL Speaking: Advanced Mid)
2. Write and present effective academic papers
3. Publish effective non-academic texts for local, tribal, and national audiences
4. Evaluate important data to advance research about one or more areas of Navajo linguistics
5. Lead projects that address contemporary culture and language revitalization challenges

6. Apply various research methods to develop a doctoral dissertation in one or more sub-areas of Navajo linguistics.