NTU Assessment Guide

Fall 2016
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1. Introduction
Purpose of Assessment Plan Process
The purpose of the assessment plan and process at Navajo Technical University (NTU) is to provide for continuous assessment at all levels - general education, course, program, and institutional – with the outcome of improved student learning. Assessment is part of the Higher Learning criteria for accreditation (Core Component 4.B). Assessment of student learning (ASL) is one of the priorities for NTU’s Strategic Plan - Academic Excellence component.

Diné Philosophy of Education
The Diné Philosophy of Education is aligned with the four cardinal directions and encompasses the Navajo way of life and Navajo values. Nitsáhákees is thinking, Nahat’á is planning, Iíná is living and Siihasin is hope or reflection. NTU’s assessment, teaching, and learning are aligned with the Diné Philosophy of Education as shown in Figure 1 below:

Diné Philosophy of Education

Nitsáhákees
What is important to

Siihasin
Redesign to Improve Learning

Iíná
Analyze Data and Assessment Results

Nahat’á
Plan for data collection &

Figure 1: Diné Philosophy of Education and Assessment, Teaching, and Learning
1.1. Definition of Academic Assessment
This is a process of collecting and analyzing data for continuous improvement of students’ learning. Assessment results are also used for decision-making and strategic planning.

1.2. Mission Statement for NTU Assessment
The mission of NTU assessment is to create a culture of continuous improvement of student learning throughout the campus using effective and relevant assessment of the values, skills, attributes, and knowledge offered through an NTU education. The process will be guided by the Diné cultural principles: Nitsáhákees, Nahátá, Iína, Siihasin.

1.3. Goals of NTU Assessment
- Provide a cyclical source of reliable information from assessment for the improvement of student learning.
- Provide a well-planned systematic process of data collection.
- Provide systematic analyses of data for making institutional decisions about budgeting, strategic planning, faculty development, and program changes.
- Provide feedback that links the institutional outcomes to the mission statement.
- Improve the effectiveness and relevance of General Education coursework.
- Assist institutional review and curriculum planning with assessment results.

1.4. Assessment Procedure at NTU
NTU’s assessment procedure is shown in Figure 2 below. Program and General Education assessment are conducted in the fall semester, while Course and General Education assessment are measured in the spring semester. During the first three weeks of the semester, faculty submit pre-tests and assessment plans using a standardized assessment reporting template provided in Appendices B, C, and D, to the Assessment Chair. The Assessment Committee then reviews the faculty assessment plan using the assessment evaluation template shown in Appendix E to give feedback to faculty regarding their assessment plan.

During the last week three weeks before the end of the semester, faculty submit post-test reports, using the standardized assessment reporting template presented in Appendices B, C, and D, to the Assessment Chair. The Assessment Chair, the Data Assessment Director, and the Dean of Undergraduate Studies then compile the final annual assessment report which is then posted on the NTU website for public access. To “close the loop”, faculty make documented changes to improve their students’ learning based on the results in the final assessment report.
1.5. **Direct and Indirect Measures of Assessment**

Assessment can be conducted using direct or indirect measures or both as illustrated with some examples below.

**Direct Measures of Student Learning are:**

- Scores and pass rates on standardized tests (licensure/certification as well as other published tests determining key student learning outcomes).
- Writing samples
- Score gains indicating the “value added” to the students’ learning experiences by comparing entry and exit tests (either published or locally developed) as well as writing samples.
- Locally designed quizzes, tests, and inventories
e. Portfolio artifacts (these artifacts could be designed for introductory, working, or professional portfolios).

f. Capstone projects (these can include research papers, presentations, theses, dissertations, oral defenses, exhibitions, or performances).

g. Case studies

h. Team/group projects and presentations

i. Oral examination

j. Internships, clinical experiences, practicums, student teaching, or other professional/content-related experiences engaging students in hands-on experiences in their respective fields of study (accompanied by ratings or evaluation forms from field/clinical supervisors)

k. Service-learning projects or experiences.

l. Authentic and performance-based projects or experiences engaging students in opportunities to apply their knowledge to the larger community (accompanied by ratings, scoring rubrics or performance checklists from project/experience coordinator or supervisor).

m. Graduates’ skills in the workplace rated by employers.

n. Online course asynchronous discussions analyzed by class instructors

**Indirect Measures of Student Learning include the following:**

- a. Comparison between admission and graduation rates.
- b. Number or rate of graduating students pursuing their education at the next level.
- c. Reputation of graduate or post-graduate programs accepting graduating students.
- d. Employment or placement rates of graduating students into appropriate career positions.
- e. Course evaluation items related to the overall course or curriculum quality, rather than instructor effectiveness.
- f. Number or rate of students involved in faculty research, collaborative publications and/or presentations, service learning, or extension of learning in the larger community.
- g. Surveys, questionnaires, open-ended self-reports, focus-group or individual interviews dealing with current students’ perception of their own learning.

h. Surveys, questionnaires, focus-group or individual interviews dealing with alumni’s perception of their own learning or of their current career satisfaction (which relies on their effectiveness in the workplace, influenced by the knowledge, skills, and/or dispositions developed in school).

i. Surveys, questionnaires, focus-group or individual interviews dealing with the faculty and staff members’ perception of student learning as supported by the programs and services provided to students.

j. Quantitative data such as enrollment numbers

k. Honors, awards, scholarships, and other forms of public recognition earned by students and alumni.
2. Course Assessment
In course assessment, expected outcomes for a particular course are measured. **Two to three expected course outcomes** (goals) are measured in the spring semester. Course learning goals should be included in the syllabi. Some program goals can also be included in the course syllabi for those to be measured. In some cases, a subcomponent, or subset of program goals are to be measured. **Appendix A** explains various tools for measuring course assessment.

3. Program Assessment
Each program conducts assessment based on program goals or expected program outcomes. Each department determines which goals and program expected outcomes as provided in **Appendix G** for listing of goals to measure. The program assessment is discipline specific, and is concerned with learning that is specific to the program’s majors and degrees. **One to three program goals** are measured every fall semester and the program learning goals should be included in course syllabi. Different methods to measure program assessment are shown in **Appendix A**.

4. General Education (Gen Ed.) Assessment
Navajo Technical University’s purpose in higher education and general education is to educate students within the Diné Philosophy of Education (DPE) to be independent, critical thinkers, competent in their chosen professions by possessing a solid foundation in math, English, laboratory, social and behavioral sciences, communication, and information technology, as provided in **Appendix F**. General Education is the foundation for all degree and certificate programs at Navajo Technical University, providing students with core knowledge, skills, attributes, and values. **One General Education goal** is measured every semester and the General Education goal should be included in the syllabi as shown in **Appendix F** for the goals identified for measurement by semester and year. Assessment of institutional General Education outcomes is completed through direct and indirect methods. Examples of assessment methods for Gen Ed. are provided in **Appendix A**.

5. Institutional Assessment
The Data Assessment Director provides information and analysis to support NTU’s planning, assessment, and decision-making with regard to enrollment management, graduation rate, retention rate, persistence rate, and attendance. The various techniques that can be used for measuring institutional assessment are presented in **Appendix A**.

6. Uses of Assessment Results
Assessment data can be used to improve the following:
- Assessment tools
- Class size
- Course content
- Course staffing and scheduling
- Curriculum
- Facilities
- Faculty student interactions
Inclusion of students in faculty research
Internships
Pedagogy
Prerequisites
Student advising

7. Program Review
Each program at NTU is reviewed once every three years to determine if the program is viable or if changes need to be made in the curriculum. According to the Higher Learning Commission (HLC) requirements, every institution must maintain a practice of regular program review, i.e., HLC Core Component 4A. The Institution demonstrates responsibility for the quality of its educational programs. The following information can be derived from a program review:

- To determine if a program is viable.
- Ensure that a program’s mission, goals, and priorities align with NTU’s mission and strategic plan.
- Evaluate the quality of a program in comparison to national standards.
- Assist the University and departments to achieve optimal use of available resources.
- Faculty and staffing requirements
- Analysis of physical space appropriateness for teaching
- Adequacy of laboratory equipment
- Adequacy of supplies which are allocated to the programs to facilitate teaching
- Enrollment management, employment data, graduation rates, persistence, and retention
- Revenue and budget information
- Future trends in the industry
Appendix A: Methods of Assessment at Navajo Technical University

- Student Satisfaction Survey
- ACCUPLACER Scores
- Graduation Rate
- Attendance Rate
- Graduation Exit Survey
- Retention Rate
- Persistence Rate
- Job Placement Program
- Enrollment Management

- Survey
- Bloom’s Taxonomy
- Pre/post-tests
- Rubric on essay
- Portfolios

- Employer Internship
- Interviews/Ratings
- Advisory Committee Surveys
- Portfolios
- Projects-based and Experiential Learning
- Presentations
- Practicums
- Capstone
- Program Standardized Tests
- Pre/post-tests

Course Assessment

- Assignments
- Student/Instructor Feedback
- Quizzes
- Attendance
- Projects
- Exams
- Course Evaluations
- Portfolio (Artifacts)
## Course Assessment

**Assessment Planning/Reporting Sheet**

<table>
<thead>
<tr>
<th>Course #:</th>
<th>Semester:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Campus:</td>
<td>Instructor:</td>
</tr>
</tbody>
</table>

Answer questions 1 - 3B for your Assessment Plan/proposal.

Answer all questions for your Assessment Report.

Please attach your syllabus, pre/post-tests, rubrics and graphs in a separate file identified with your name and the semester/year.

1. What is/are the course goals (course objectives) you are going to measure?

2. What is/are the method(s) (i.e., pre/post-tests, rubrics, and surveys) you will use for measuring expected course outcomes?

3. What are your pre-assessment outcomes?
   A. Number of students for pre-assessment: ______
   B. What is your expectation/benchmark?

4. What are your post-assessment outcomes?
   A. Number of students for post-assessment: ______
   B. Did your students meet your expectation/benchmark?

5. Based on your post assessment outcomes, what changes will you make in teaching methodology, expected course outcomes, or anything else to improve student learning?

6. Based on your conclusions from your post assessment outcomes, how are you going to improve your assessment activities?
Benchmark: _____% students will meet or exceed expectation.
(What percentage of the class do you expect to meet or exceed your expectation for the course?)

<table>
<thead>
<tr>
<th>Exceeds Expectation</th>
<th>Students are able to successfully complete &gt; 80% of the evaluation method (i.e., pre-test, survey, etc.)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Results</strong></td>
<td></td>
</tr>
<tr>
<td>Initial:</td>
<td></td>
</tr>
<tr>
<td>Final:</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Meets Expectation</th>
<th>Students are able to successfully complete 70-80% of the evaluation method (i.e., pre-test, survey, etc.)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Results</strong></td>
<td></td>
</tr>
<tr>
<td>Initial:</td>
<td></td>
</tr>
<tr>
<td>Final:</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Does not meet Expectation</th>
<th>Students are able to successfully complete &lt; 70% of the evaluation method (i.e., pre-test, survey, etc.)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Results</strong></td>
<td></td>
</tr>
<tr>
<td>Initial:</td>
<td></td>
</tr>
<tr>
<td>Final:</td>
<td></td>
</tr>
</tbody>
</table>

Final Result:   ____% Met or exceeded expectations

___% Did not meet expectations
# Program Assessment

<table>
<thead>
<tr>
<th>Assessment Planning/Reporting Sheet</th>
<th>Program:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Course #:</td>
<td>Semester:</td>
</tr>
<tr>
<td>Campus:</td>
<td></td>
</tr>
<tr>
<td>Instructor:</td>
<td></td>
</tr>
</tbody>
</table>

Answer questions 1 - 5B for your Assessment Plan/proposal. 
Answer all questions for your Assessment Report. 
Please attach your syllabus, pre/post-tests, rubrics and graphs in a separate file identified with your name and the semester/year.

1. What is your program mission statement?
2. What are your program goals?
3. What is/are the program goal(s) you are going to measure?
4. What is/are the method(s) (direct or indirect, or both) you will use to measure your programs goals?
5. What are your pre-assessment outcomes?
   A. Number of students for pre-assessment: _______
   B. What is your expectation/benchmark? _______
6. What are your post-assessment outcomes?
   A. Number of students for post-assessment: _______
   B. Did your students meet your expectation/benchmark?
7. Based on your post assessment outcomes, what changes will you make in teaching methodology, **program goals**, or anything else to improve student learning?
8. How will your proposed changes continue to support your stated program goals?
9. Based on your conclusions from your post assessment outcomes, how are you going to improve your assessment activities?
Benchmark: _____% students will meet or exceed expectation.  
(What percentage of the class do you expect to meet or exceed your expectation for the course?)

<table>
<thead>
<tr>
<th>Exceeds Expectation</th>
<th>Results</th>
</tr>
</thead>
<tbody>
<tr>
<td>Students are able to successfully complete &gt; 80% of the evaluation method (i.e., pre-test, survey, etc.)</td>
<td></td>
</tr>
<tr>
<td>Initial:</td>
<td></td>
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<tr>
<td>Final:</td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>Meets Expectation</th>
<th>Results</th>
</tr>
</thead>
<tbody>
<tr>
<td>Students are able to successfully complete &gt; 80% of the evaluation method (i.e., pre-test, survey, etc.)</td>
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<td>Initial:</td>
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<td>Final:</td>
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<table>
<thead>
<tr>
<th>Does not meet Expectation</th>
<th>Results</th>
</tr>
</thead>
<tbody>
<tr>
<td>Students are able to successfully complete &gt; 80% of the evaluation method (i.e., pre-test, survey, etc.)</td>
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<tr>
<td>Initial:</td>
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<td>Final:</td>
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</table>

Final Result: ____% Met or exceeded expectations

 ____% Did not meet expectations

Two-Year Program-Level Assessment Plan for One-year Programs

**Name of Program:**

<table>
<thead>
<tr>
<th>Program Goals</th>
<th>2015</th>
<th>2016</th>
<th>2017</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>x</td>
<td></td>
<td>x</td>
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<tr>
<td>2.</td>
<td>x</td>
<td>x</td>
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<td>3.</td>
<td>x</td>
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<td>4.</td>
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<td>5.</td>
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<td>6.</td>
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</table>
Four-Year Program-Level Assessment Plan for Two-year Programs

**Name of Program:**

<table>
<thead>
<tr>
<th>Program Goals (Expected Program Outcomes)</th>
<th>2015</th>
<th>2016</th>
<th>2017</th>
<th>2018</th>
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<tbody>
<tr>
<td>1.</td>
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Six-Year Program-Level Assessment Plan for Four-Year Programs

**Name of Program:**

<table>
<thead>
<tr>
<th>Program Goals (Expected Program Outcomes)</th>
<th>2015</th>
<th>2016</th>
<th>2017</th>
<th>2018</th>
<th>2019</th>
<th>2020</th>
</tr>
</thead>
<tbody>
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<td>10.</td>
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<td>11.</td>
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</tbody>
</table>

List of courses where the Program Goals (Expected Program Outcomes) will be measured

**Name of Program:**

<table>
<thead>
<tr>
<th>Program Goals (Expected Program Outcomes)</th>
<th>Courses</th>
<th>Performance Level: Competence or Mastery</th>
<th>Name of Faculty</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
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<tr>
<td>2.</td>
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<td>3.</td>
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<td>4.</td>
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<td>5.</td>
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<tr>
<td>6.</td>
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</tbody>
</table>
# General Education (Gen Ed.) Assessment

**Assessment Planning/Reporting Sheet**

<table>
<thead>
<tr>
<th>Course #:</th>
<th>Gen Ed. goal(s):</th>
</tr>
</thead>
<tbody>
<tr>
<td>Campus:</td>
<td>Semester:</td>
</tr>
<tr>
<td>Instructor:</td>
<td></td>
</tr>
</tbody>
</table>

Answer questions 1 - 3B for your Assessment Plan/proposal.
Answer all questions for your Assessment Report.
Please attach your syllabus, pre/post-tests, rubrics and graphs in a separate file identified with your name and the semester/year.

1. These are the Gen Ed Goals. We are assessing Learn Actively for Fall 2015.
   - Learn Actively (Fall 2015)
   - Think critically, creatively, and reflectively (Spring 2016)
   - Interact Effectively in Diverse Environments (Fall 2016)
   - Communicate Clearly (Spring 2017)

2. Which of your course objectives connects to the above measure for Gen. Ed.?

3. What is/are the method(s) (i.e., pre/post-tests, rubrics, and surveys) you will use to assess the above measure for Gen Ed.?

4. What are your pre-assessment outcomes?
   A. Number of students for pre-assessment: ______
   B. What is your expectation/benchmark?

5. What are your post-assessment outcomes?
   A. Number of students for post-assessment: ______
   B. Did your students meet your expectation/benchmark?

6. Based on your conclusions from your post assessment outcomes, how are you going to improve your Gen. Ed. assessment activities?
Benchmark: _____% students will meet or exceed expectation.
(What percentage of the class do you expect to meet or exceed your expectation for the course?)

<table>
<thead>
<tr>
<th>Exceeds Expectation</th>
<th>Use &gt; 80% of the appropriate procedure</th>
</tr>
</thead>
</table>
| **Results**         | Initial: 
|                     | Final: | 

<table>
<thead>
<tr>
<th>Meets Expectation</th>
<th>Use at least 70-80% of the appropriate procedure</th>
</tr>
</thead>
</table>
| **Results**       | Initial: 
|                   | Final: | 

<table>
<thead>
<tr>
<th>Does not meet Expectation</th>
<th>Use &lt; 70% of the appropriate procedure</th>
</tr>
</thead>
</table>
| **Results**               | Initial: 
|                           | Final: | 

**Final Result:**  ____%  Met or exceeded expectations

____%  Did not meet expectations
### E: Assessment Evaluation Template

<table>
<thead>
<tr>
<th>Performance Criteria</th>
<th>No Evidence 0</th>
<th>Emerging 1</th>
<th>Developing 2</th>
<th>Achieving 3</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Mission Statement</strong></td>
<td>Mission statement given, but does not express purpose of program.</td>
<td>Mission statement clearly expresses purpose of program.</td>
<td>Mission statement and theoretical framework clearly express program purpose and foundations.</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Program Goals</strong></td>
<td>Competencies/program outcomes are unclear</td>
<td>Over 50% of the discipline and program outcomes are clear and understandable</td>
<td>Over 75% of the competencies and pro-gram outcomes are clear and understandable</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Measurement Styles</strong></td>
<td>Competencies/Outcomes only have indirect measures</td>
<td>Competencies/Outcomes only have direct measures</td>
<td>Competencies/Outcomes have both direct and indirect measures</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Measurement Goals (Expected Results)</strong></td>
<td>Measurement goal is not clearly stated and is not obtainable</td>
<td>Measurement goal is either not obtainable or not clearly stated</td>
<td>Measurement goal is clearly stated and obtainable</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Findings (Actual Results)</strong></td>
<td>There are no actual results for all of the measurement goals.</td>
<td>50% of the measurement goals show actual results.</td>
<td>75% of the measurement goals show actual results.</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Analysis of the Results</strong></td>
<td>Analysis states the relationship between actual and expected results</td>
<td>Analysis states the relationship between actual and expected results and describes what it means</td>
<td>Analysis states the relationship between actual and expected results and describes what it means. Strengths for opportunities and improvement are identified</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Results of Last Year’s Recommended Actions</strong></td>
<td>Some actions implemented</td>
<td>All actions implemented</td>
<td>All actions implemented as assigned and completed on time. Analysis of effectiveness included</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Strengths</strong></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td><strong>Opportunities</strong></td>
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</table>
### F: General Education Plan

<table>
<thead>
<tr>
<th>Semester</th>
<th>Gen Ed. Goals to be Measured</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fall 2015</td>
<td>Gen Ed., Goal #1: Learn Actively</td>
</tr>
<tr>
<td>Spring 2016</td>
<td>Gen Ed., Goal #2 Think critically, Creatively, and Reflectively</td>
</tr>
<tr>
<td>Fall 2016</td>
<td>Gen Ed., Goal #3: Interact Effectively in Diverse Environments</td>
</tr>
<tr>
<td>Spring 2017</td>
<td>Gen Ed., Goal #4: Communicate Clearly</td>
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</tbody>
</table>
Appendix G: NTU Program Mission and Goals

Accounting Program Goals
Graduates from Accounting program should have the following expected outcomes:
1. Graduates should be able to use accounting information to make informed decisions about the operating performance and financial position of a company.
2. Graduates should be able to demonstrate competency in preparing complex financial statements.
3. Graduates should be able to describe all aspects of generally accepted accounting principles.
4. Graduates should be able to demonstrate competency in preparing personal income tax returns.
5. Graduates should be able to identify personal financial issues of individuals.
6. Students should be able to demonstrate an understanding of the monetary and banking issues that are pervasive in all aspects of financial services.
7. Students should be able to describe personal financial and investment concepts that enable them to provide customers with advice on investments, insurance, and estate planning.
8. Students should be able to know how to prepare financial statements for a company.

Administrative Office Specialist (AOS) Program Goals
Graduates from the Administrative Office Specialist program, students must complete and acquire the knowledge, understanding and ability to demonstrate the following outcomes:
1. Become certified in the use of Microsoft office suite and Microsoft project.
2. Have an understanding of how an office operates and how to manage an office.
3. Have competent writing skills, as well as technical presentation skills.
4. Able to be a member of, and contribute to a team, and know the norms of teams.
5. Have the ability to communicate clearly and concisely in oral communication, and in written documents.
6. Demonstrate mastery in basic business law.
7. Be able to explain business ethics to ethical questions encountered.
8. Have the ability to solve rudimentary accounting issues as needed.
9. Know of advertising, marketing, and public relations practices.

Automotive Technology Program Goals
The proposed A.A.S. in Automotive Technology would concentrate on the outcomes required in order for the Navajo Technical University’s Automotive Technician program to become NATEF accredited. These expected outcomes are:
1. All students will complete test preparation for the National Institute for Automotive Service Excellence (ASE) exams, passing the practice tests with a high enough score to signify that they are prepared to become ASE certified.
2. Students will demonstrate that they understand an ASE certified technician’s responsibility to nature and the environment regarding shop waste disposal.
3. Students will demonstrate they have a basic understanding of Work Order Intake and Delivery processes.
4. Students will be able to describe how transportation is a huge global industry with a variety of employment opportunities.

**Carpentry Program Goals**

**Graduates of Carpentry will have the following skills, attributes, and values:**

1. Be able to identify and solve problems related to carpentry operations.
2. Be able to construct the common elements of residential/commercial carpentry to building code standards.
3. Be able to complete the planning and investigation that is required for construction projects.
4. Be able to create scaled drawings of and estimations for construction projects.
5. Be able to identify, compute, and apply measurements from blueprints to construction projects.
6. Be able to locate, select, and apply technical data from building code and manufacturer resources.
7. Be able to recognize and avoid or resolve potentially hazardous situations related to carpentry.
8. Be able to demonstrate appropriate workplace behaviors.
9. Be able to master the skills to become employed as a carpenter or in a related field.

**Computer-aided Design (CAD) Program Goals**

Upon successful completion of all program requirements, graduates of CAD will be able to produce the following outcomes:

1. Demonstrate a thorough knowledge and expertise in multiple CAD programs, to include but not limited to AutoCAD, Inventor, Revit, Pro/E, SolidWorks, and Master Cam.
2. Demonstrate knowledge of drafting standards set forth by the American National Standards Institute (ANSI).
3. Have a general understanding of standard drafting principles such as alphabet of lines, precedence of lines, dimensioning standards and projection techniques.
4. Apply appropriate mathematical and scientific principles to solve problems utilizing a CAD program, particularly descriptive geometry.
5. Become proficient in the use of 3-D Parametric Modeling packages such as Inventor and Revit.
6. Provide an education that integrates a core curriculum with drafting theory, computer theory, technical background, and practice elements, for students who will seek advanced degrees.
7. Demonstrate and apply skills necessary for visual thinking and graphic problem solving.
8. Work cooperatively and productively in groups to solve problems.
9. Foster a learning environment that emulates industrial standards.
10. Demonstrate working knowledge to translate engineering sketches into accurate scaled drawings.
11. Demonstrate a working knowledge of the use of Geometric Dimensioning and Tolerancing (GDT) techniques used in industry.
12.
Construction Technology Program Goals
Upon completing the Construction Technology program at NTU, graduates will acquire the following skills, attributes, and values:
1. Ability to use efficient and safe construction skills and techniques on construction projects.
2. Demonstrate effective teamwork in community and workplace.
3. Proficient use computer technology to automate, organize, store and present information used in construction activities and career advancement.
4. Employ effective and appropriate communication skills when interacting with trade associates, design associates, vendors and customers.
5. Apply decision-making and problem-solving skills in community and workplace.
6. Practice ethical standards of business conduct and professional services.

Creative Writing and New Media Program Goals
Graduates of the Creative Writing & New Media Program will:
1. Understand craft terms and concepts and be able to articulate how these aspects of craft contribute to well-crafted and compelling works of literary merit.
2. Be able to manipulate craft elements in writing and revising a story, essay, poem, or script.
3. Have knowledge of significant currents in contemporary fiction, poetry, prose, or script writing.
4. Be able to trace the development of the current literary landscape and contextualize one’s work within it.
5. Be able to employ a writing process that recursively progresses through drafting, peer and instructor feedback, reflection, revising, and editing.
6. Produce a manuscript of marketable quality, and then create a digital media product from the finished manuscript.
7. Be able to conceptualize, implement, and evaluate substantial, meaningful, and purposeful projects using digital media techniques.
8. Be able to work competently and collaboratively in a variety of digital media environments.

Culinary Program Goals
Upon completion of a Culinary degree, the graduates will develop competencies in:
1. Food preparation skills necessary for a variety of culinary operations.
2. Organizational skills in planning and documenting food production activities and the ability to implement and maintain cost and quality controls to meet operational goals of the various service areas.
3. Emerging management skills including leadership necessary for building and maintaining a food service team.
4. Effective communication skills integral to maintaining good relation with both co-workers and customers.
5. Technology skills applicable to current food service operations.

Diné Studies and Law Studies Program Goals
1. To produce graduates for employment as school teachers, cultural teachers,
instructors, professors, cultural interpreters, cultural social workers, health care
workers, community service workers and so forth.
2. For graduates to teach at Elementary Schools, Day Care Centers, and teach Diné
culture and/or language to their kin, in their communities, at educational
institutions, places of employment or at various gathering of Diné people.
3. To assist in increasing educational level of Navajo people and help in the
refinement of Diné leadership through the use of traditional cultural knowledge,
its philosophy and language for emerging Diné leaders.

**Early Childhood Program Goals**
Graduates of the Early Childhood Program will:
1. Create and evaluate an early childhood program that uses the philosophical and social
foundations of early care and education.
2. Demonstrate knowledge of basic principles of administration, organization, and
operation of early childhood programs, including supervision of staff, volunteers, etc.
3. Demonstrate knowledge of varying program models, curriculum and learning
environments that meet the individual needs of all young children, including those
with diverse abilities.
4. Demonstrate understanding of the early childhood profession in Native communities,
its multiple historical philosophical, and social foundations, and how these
foundations influence current Native thought and practice.
5. understand Navajo cultural epistemology and paradigm, and how it works with
Nitsahakees, Hahat’a, Iina and Siih Hasin, and with Sa’ah Naahgaii Bi’keh Hozho.

**Electrical Trades Program Goals**
Upon completing the Electrical Trades program at NTU, graduates will acquire the following
skills and knowledge:
1. Proficient in installing new wiring and repairing old wiring.
2. Competent in troubleshooting and repairing electrical systems.
3. Demonstrate competency in establishing grounding system.
4. Ability of installing service to buildings and other structures.
5. Providing power and controls to motors, heating, ventilation, and air conditioning
(HVAC), and other equipment.
6. Ability in installing fire alarm systems and security systems.
7. Installing and repairing traffic signals, outdoor lighting, and outdoor power feeders.
8. Establishing Occupational Safety & Health Administration (OSHA) and customer safety
requirements.
9. Installing instrumentation and process control systems, including energy management
systems.
10. Erecting and assembling power generation equipment.
11. Installing, maintaining and repairing lighting protection systems.
12. Demonstrate competent in installing and repairing telephone and data systems.

**Energy Systems Program Goals**
Upon successful completion of Energy Systems program, students will have the following
expected outcomes:
1. Students will be prepared for entry level employment in the fields of manufacturing, installation, and maintenance of renewable energy production.
2. Successful students will be knowledgeable in electrical circuitry.
3. Graduates from Energy Systems will have strong knowledge prototype development, systems analysis, and testing.
4. Students will be competent in systems maintenance, instrument calibration, and report preparation.
5. Graduates will be provided with the technician-level skills necessary for entry into a broad range of positions related to the manufacture, maintenance and integration of renewable energy technologies.
6. Graduates from Energy systems will have the analytical skills necessary to make economic, systems design, and procurement decisions.

**Environmental Science Program Goals**

Graduates of Environmental Science and Natural resources will be trained to produce the following expected outcomes:

1. Demonstrate a thorough competence in understanding the geological factors affecting the management of the environment, and the structure, and function of biological ecosystems.
2. Develop the capacity and the commitment to understand current environmental issues from an interdisciplinary perspective by integrating insights and information from natural sciences, social sciences, and humanities.
3. Recognize environmental problems as existing across the margins of scientific, political, and human factors.
4. Demonstrate a thorough competence in understanding quantitative and qualitative research methods as applied to questions related to Environmental Science and Natural resources.
5. Be informed about pursuing career opportunities, professional development, and further studies in environmental programs.
6. Demonstrate a complete understanding of effective oral and written communication necessary to construct, evaluate, and present solutions to environmental problems.

**Engineering Program Goals**

1. An ability to apply knowledge of mathematics, science, and engineering.
2. An ability to design and conduct experiments as well as to analyze and interpret data.
3. An ability to design a system, component, or process to meet desired needs within realistic constraints such as economic, environmental, social, political, ethical, health and safety, manufacturability, and sustainability.
4. An ability to function on multidisciplinary teams.
5. An ability to identify, formulate, and solve engineering problems.
6. An understanding of professional and ethical responsibility.
7. An ability to communicate effectively.
8. The broad education necessary to understand the impact of engineering solutions in a global, economic, environmental, and societal context.
9. A recognition of the need for and an ability to engage in life-long learning
10. A knowledge of contemporary issues.
11. An ability to use the techniques, skills, and modern engineering tools necessary for engineering practice.

**Industrial Engineering Mission Statement**
The mission of the Industrial Engineering Program at Navajo Technical University is to provide the best possible education, research, services, and resources to prepare students for careers in industry, research or academia and to achieve success in life.

**General Studies Mission Statement**
Further developing NTU’s mission to provide Associate of Arts degree, the General Studies Program is committed to serving the working professional/nontraditional student and assisting him or her in obtaining an Associate of Arts degree by offering general education courses. By obtaining an Associate’s of Arts Degree, graduates will improve their overall educational level, become better connected to their culture and more aware of other cultures, more employable, move into a better paying position, and/or be prepared to enter a baccalaureate degree.

**General Studies Program Goals**
1. To improve student’s overall educational level with general education courses.
2. To provide a connection from class offerings to student’s workplace or family life; to make course offerings relevant to student’s life.
3. To build an educational foundation a student can use to pursue a higher degree if desired.

**Geographic Information Technology (GIT) Program Goals**
**Graduates of GIT will have the following skills, attributes, and values:**
1. Graduates of GIT should be able to demonstrate a mastery of geographic analysis and cartographic skills.
2. Graduates will be able to communicate the GIT project process and the results in written, oral, and graphic media at a professional level.
3. Understand the spatial aspects of an external clients’ GIT needs and develop a practical project plan for addressing those needs.
4. Students will be able to design, compile, and develop a spatial database and a set of analytical tools into a system appropriate to the problem.

**Industrial Maintenance and Operations Program Goals**
**Graduates from Industrial Maintenance and Operations will have the following outcomes:**
1. Students should have basic knowledge of oxyfuel cutting/arc welding.
2. Students should be able to determine basic power tools and how to use them safely.
3. Students should be able to install and test industrial equipment.
4. Students should be able to troubleshoot and repair industrial systems.
5. Students should be able to demonstrate knowledge of pumps and drivers with hands-on learning.
6. Students should have fundamental knowledge of valves.
7. Graduates should be able to read and interpret schematics of mechanical and electrical components.
8. Students should demonstrate competencies in material handling and rigging.
9. Students should be able to understand industrial safety standards in order to protect the employees and the equipment.

**Information Technology (I.T.) Program Goals**
Upon completion of an I.T. degree, the graduates will have the following attributes and values:
1. Participate in planning, implementing and evaluating language-specific team programming solutions to specific business problems.
2. Complete individual practical experiences in a variety of programming languages and situations.
3. Employ deductive logic skills to analyze malfunctioning computer programs and use proper debugging and testing skills, modifying them so that they function correctly.
4. Create computer program documentation through the use of flow charts, inter-procedural optimization (IPO) charts, pseudocode, internal program comments, and user instructions.
5. Demonstrate familiarity with computer hardware and networking.
6. Demonstrate knowledge of, and the ability to write programs for, the World Wide Web.
7. Interpret the impact of change in work, society and world environments on computer programming.
8. Employ deductive logic skills to analyze malfunctioning computer games, and use proper debugging and testing skills, and then modify them so that they function correctly.
9. Configure wireless local area network (WLAN) products, including access points, bridges, client devices and accessories.
10. Demonstrate proficiency in hardware and software installation and configuration.
11. Design and implement local area network (LAN) and wide area network (WAN) infrastructures.
12. Manage server resources, monitor server performance, and safeguard data.
13. Analyze, design, and build business database systems.

**Law Advocate Program Goals**
Upon completion of Law Advocate program at Navajo Tech, graduates should have the following expected outcomes:
1. Graduates should be able to understand and interpret Navajo Law.
2. Graduates should be able to understand and interpret State and Federal laws.
3. Graduates should be able to apply ethical rules related to the legal profession.
4. Graduates should be able to demonstrate the use of specialized legal terminology.
5. Graduates should be able to prepare legal documents in their specialized format.
6. Graduates should be able to illustrate law office management procedures.
7. Graduates should be able to pass Navajo Nation Bar Examination.

**Mathematics Program Goals**
Students who graduate from Mathematics Program will have the following outcomes:
1. Successfully transfer to bachelor’s programs that require mathematical skills like engineering, math education, accounting, finance, marketing, and the like.
2. Be able to make appropriate use of technology in the solution of a mathematical problem.
3. Be able to communicate sound mathematical reasoning and solutions of mathematical problems in writing.
4. Be able to communicate sound mathematical reasoning and solutions of mathematical problems through oral presentations.
5. Be able to collaborate with peers to solve mathematical problems.
6. Be able to use problem-solving techniques to formulate a mathematical model for and solve a complex problem.

**New Media Mission Statement**
The mission of the New Media B.A.S. IT Program is to prepare students for the highly innovative, creative and technical world of digital media. Students will become effective in digital sound design, digital video production and post-production, 2D and 3D animation, visual graphic arts, and web design. Students will also be introduced to the history, principles and theories of film, visual arts, media criticism, ethics, and sensory perception. Students will receive a hands-on approach to learning and will be challenged to apply their artistic creativity in the production of digital media.

**New Media Program Goals (B.A.S.)**
Upon successful completion of New Media program, graduates should have the following attributes:

<table>
<thead>
<tr>
<th>Program Goals for New Media</th>
<th>2015</th>
<th>2016</th>
<th>2017</th>
<th>2018</th>
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<tbody>
<tr>
<td>1. Work competently in a variety of digital media environments.</td>
<td>X</td>
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<tr>
<td>2. Conceptualize, implement and evaluate substantial, meaningful and purposeful projects using digital media techniques.</td>
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<tr>
<td>3. Evaluate ethical and legal considerations in working with digital media.</td>
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<tr>
<td>4. Use written, oral and visual communication skills to communicate information and ideas about new media.</td>
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<td>X</td>
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<tr>
<td>5. Critique studio practice in relation to contemporary innovations in technology and art.</td>
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<td>X</td>
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<tr>
<td>6. Examine and participate in virtual environments.</td>
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<tr>
<td>7. Describe the techno-cultural discourse surrounding new-media technologies and practice.</td>
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<td>X</td>
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<tr>
<td>8. Work in collaborative environments.</td>
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<tr>
<td>9. Develop self-directed projects that synthesize creative, technical, and critical approaches.</td>
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**Nursing Program Goals**
Upon completion of the Associate Degree Nursing Program at Navajo Technical College, the
graduate is able to demonstrate the following outcomes:

In the following outcomes, patient will be defined as an individual, family, and community.

I. The graduate is able to use the nursing process in assisting an individual or a group of individuals with common health problems to achieve an optimum state of well-being.
   1.1 Assess the level of care needed.
   1.2 Assess the needs of the patient.
   1.3 Specify an effective plan of patient care based upon nursing diagnosis and prioritization of patient needs.
   1.4 Formulate interventions appropriate to achievement of desired patient outcomes.
   1.5 Evaluate and, if necessary, revise the plan of care according to individual patient response.

II. The graduate is able to provide direct nursing care to individuals or a group of individuals with common health problems using principles from the biological, cultural, social, and physical sciences and incorporating the total healthcare plan.
   2.1 Assess common health problems which occur in the patient.
   2.2 Formulate nursing diagnoses and plan nursing interventions in accordance with cultural, social, physical and biological science principles.
   2.3 Perform nursing interventions in collaboration with the patient and his/her family.
   2.4 Collaborate with appropriate multidisciplinary resources beneficial to the patient's needs.
   2.5 Evaluate and, if necessary, revise the nursing care plan.

III. The graduate, when working with an individual or a group of individuals, is able to relate knowledge of the language and behavioral sciences to nursing care in order to assure meaningful, therapeutic relationships.
   3.1 Assess the needs of self and others to establish meaningful, therapeutic relationships.
   3.2 Formulate nursing diagnoses and plan approaches for the most therapeutic interaction.
   3.3 Utilize effective communication with others.
   3.4 Evaluate the effectiveness of the interaction and make necessary revisions.

Public Administration Program Goals
Upon completion of Public Administration program, the graduates will have the following skills, attributes, and values:

1. Students should be able to describe the four functions of a manager: planning, organizing, directing and controlling.
2. Students should be able to know how to prepare financial statements for a company.
3. Students should be able to know how to use accounting information to make informed decisions about a firm's operations.
4. Students should be able to describe the four areas of marketing: product, pricing, promotion and placement.
5. Graduates should be able to demonstrate an understanding of the role planning, organizing, leading and controlling plays in organizational success.
6. Students should be able to conduct strengths, weaknesses, opportunities, and threats (SWOT) analysis for personal and/or organizational matters.
7. Students should be able to demonstrate the ability to work with and/or lead a diverse team toward goal accomplishment.
8. Students should be able to demonstrate an understanding of the importance of attracting, developing and retaining a high quality workforce.
9. Students should be able to design appropriate and effective marketing strategies.

**Veterinary Technology Mission Statement**
The mission of the Veterinary Technology degree program is to provide students with the academic, professional “hands-on” knowledge, and skills required to master the American Veterinary Medical Association’s Veterinary Technology Student Essential and Recommended Skills List which will prepare students as entry-level veterinary technicians, to successfully pass the VTNE (Veterinary Technician National Exam), and to perform as effective veterinary health care team members. Students will exhibit conduct that reflects practice standards that are professional, ethical, and legal. Graduates of this program will recognize career opportunities in traditional and non-traditional settings such as private veterinary practice, biomedical research, academia, food safety, government agencies, zoos, and other related-health fields.

**Veterinary Technology Program Goals**
- 75% of students will successfully pass (with a 70% score) the Veterinary Technician Exam (VTNE) within the first two attempts at the completion of the veterinary technology program.
- Students will accomplish 100% of the *Veterinary Technology Student Essential Skills List* pertaining to the courses by the end of each semester.
- All students will understand ethical and legal standards of the veterinary profession.
- All students will successfully pass the veterinary practice standards with a 75% score or higher.