Program Report for the
Preparation of Technology Education Teachers

Education Standards and Practices Board

C O V E R   S H E E T

Institution: _____**University of North Dakota**_____**State:** __**ND**__

Date Submitted: January, 2008

Name of Preparer: __**Ray Diez, Assistant Professor/Chair, Department of Technology**

Phone #: __**701-777-3733**_____ **Email:** __**barbaracombs@mail.und.nodak.edu**

Program documented in this report:

    Name of Institution's program: ___**Technology Teacher Certification**_____

    Grade levels for which candidates are being prepared: ___**9-12**_____

    Degree or award level: ___**BS Industrial Technology**_____

    Is this program offered at more than one site?   ☐   **Yes**   **x No**

      If yes, list sites at which the program is offered:_____

      _____

Title of the state license for which candidates are prepared
Technology Teacher Education
_____

Program report status:

    X Initial review

    ☐ **Rejoinder**

    ☐ **Response to national recognition with conditions**

State licensure requirement for national recognition:

ESPB requires 80% of the program completers who have taken the test to pass the applicable state licensure test for the content field, if the state has a testing requirement. Does your institution require such a test? Test information and data must be reported in Section II

☐ **Yes**   x No

REPORT

I. Contextual Information – Provides the opportunity for institutions to present general information to help reviewers understand the program.

Candidate Information

Directions: Provide three years of data on candidates enrolled in the program and completing the program, beginning with the most recent academic year for which numbers have been tabulated. Please report the data separately for the levels/tracks (e.g., baccalaureate, post-baccalaureate, alternate routes, master's, doctorate) being addressed in this report.

Program: Industrial Technology		
Academic Year	**# of Candidates Enrolled in the Program**	**# of Program Completers**
Sum04-Spr05	3	1
Sum05-Spr06	3	2
Sum06-Spr07	5	2

10007 TECHNOLOGY EDUCATION

Directions: Institutions will demonstrate the use of performance assessments within their programs. This documentation must include course description, course syllabi, and college catalogue. **(Please attach a link to college catalogue, course syllabi, and other documentation.)**

I. Contextual Information & Program Response To ESPB Standards

Program: Technology Education

Descriptive Information About the Program

The goal of Technology Education is to develop a technologically literate society. Technology Education is an integrated, experience-based instructional program designed to prepare a population that is knowledgeable about technology-its evolution, systems, techniques, utilization, ethical considerations, and social and cultural significance. Technology Education results in the application of mathematics and science concepts in technology systems. Students discover, create, solve problems, and construct by using a variety of tools, machines, materials, processes, and computer systems.

Response to Standards

Context for the Technology Education report: Some of the classes reported here are only offered once every two years; i.e., IT 400: Teaching Technology Education; and all others are offered only one semester per year with the notable exception of IT 300: Technology and Society. The data that are reported in assessment tables are for the students who are enrolled as Technology Educators. The work samples provided are representative of students enrolled in the respective courses and may not be specific to those enrolled as Technology Educators. Students in the technical courses are assigned and complete the same assignments as those in the Industrial Technology Technical Management major as technical content is the same.

10007.1.   The program requires the study of the history, philosophy, and evolution of the field of technology education. The program uses varied performance assessments of the candidate's understanding and ability to apply that knowledge.

   List course number, title and description and any accompanying activities or experiences in which students engage to meet the standard.

Students study the history, philosophy, and evolution of the field of technology education as part of the IT 400: Teaching Technology Education course.

400 Teaching Technology Education.

> 3 credits. Prerequisite: Junior Standing and Consent of the Instructor. An analysis of various methods employed in instructional techniques for industry and education. Development of methods and strategies for instruction, use and ordering of instructional materials based on behavioral objectives, and classroom application of instructional techniques; lab activities.

Activities and experiences designed to meet this standard.

Lecture, readings, and discussion about the history of Technology Education and its roots in the Industrial Revolution, Manual Arts/Manual Training through the transitions of Industrial Arts and Industrial Education to the evolution of Technology Education as it is currently structured through the Standards for Technological Literacy.

Reports assigned to allow students to develop a further understanding of the development and evolution of Technology Education.

Students use the Internet to identify timelines that can be related to the history of Technology and technological developments.

Assessments

a. In class discussion of assigned readings about the History of Technology education. Students are assessed on their capability to contribute in the discussion by answering questions and asking questions of the instructor and their peers.

b. Students prepare reports on the major areas relating to the historical development and evolution of Technology Education: Industrial Revolution/apprenticeship, Manual Arts/Manual Training, Industrial Arts/Industrial Education, and Technology Education since 1982.

c. Students develop timelines that can be used to illustrate how a technology developed or to trace an invention back to a foundational technical development.

Results

Activity	Exceeds	Meets	Developing	Needs Work
Discussion/Readings	5	3		

Reports	6	2	
Timelines	5	2	1

Student Work Samples

The hard copy work samples are filed in a box according to Standard. The work sample box will be available in the Hard Copy Exhibit Room.

Work Samples for 10007.1

Lesson Plan for Magnetic Levitation (Hard copy)
Information sheet on Magnetic Levitation (Hard Copy)

PowerPoint Presentation (Hard copy)

<u>Mid-term Examination</u>

Test No. _____

University of North Dakota	IT 400
College of Business and Public Administration	Teaching Methods
Department of Technology	Mid-Term Exam

Please answer the following using complete sentences, good grammar, and paragraph structure.

<u>History</u>

1. Over the years Technology Education has undergone numerous changes. Select three such changes and describe them and the resulting impact on Technology Education.

2. In what movement(s) was(were) were the roots of Technology Education founded? Who was involved in the founding of Technology Education?

3. There have been five fundamental teaching methods commonly used in technology Education. List them and provide a brief description of each.

Standards

4.   Define "technological literacy".

5.   What are the "Standards for Technological Literacy"? Why are the "Standards" so important to Technology Education?

6.   How can the Standards for Technological Literacy be implemented in the Technology Education curriculum?

Assessment

7.   Describe the basic steps in assessment and the components of an assessment plan.

8.   Identify what you believe to be the most important form of assessment and defend your position.

9.   Based on class discussions about current standards and resulting assessment methods, in what ways should we assess our students and should we raise or lower standards in our state? Our nation? Defend your answers.

Final Examination

Name _____

IT 400
Methods in Technology Education
Final Exam

Please answer the following using complete sentences, paragraph form, and bulleted items where appropriate.

1.   What is technological literacy and what are its benefits?

2.   What should a technologically literate person know and how would they use technological literacy?

3. How can technologically literacy support a modern workforce and how can it narrow the digital divide?

4. Explain the "human connection" to technology and what it means for society.

5. Write about what the recommendations of the Committee on Technological Literacy (1) formal and informal education; (2) research; (3) decision making; and (4) educational innovation mean to you and how it will influence your future career as an educator or safety trainer.

6. Based on your observations of classes at South Middle School and Central High School respond to the following. Select one thing you did not like about the teaching methods, why, and what you would do to change the teaching situation if you were the teacher.

7. Based on your observations of classes at South Middle School and Central High School respond to the following. Select one thing you did like about the teaching methods, why, and what you would do to adopt or improve the teaching situation if you were the teacher.

10007.2 The program requires the study of the nature of technology including the scope of technology, core principles of technology, and technological relationships. The program uses varied performance assessments of the candidate's understanding and ability to apply that knowledge.

List course number, title and description and any accompanying activities or experiences in which students engage to meet the standard.

The students in our program meet the requirements of this standard in the series of 200 level courses designed to provide technological knowledge and the application of technology in the solution of problems. Students learn the "know-why" and the "know-how" of technology in these courses.

IT 201: Electromechanical Fundamentals, IT 202: Technical Drawing, IT 203: Production Processes: Manufacturing, IT 204: Industrial Materials, IT 211: Electric Circuits and Devices, IT 212: Principles of Graphic Design and Print Production, IT 213: Production Processes:

Construction, and IT 223: Applied Synthetics.

The course titles, credits, prerequisites, and description for each of these courses are listed below.

201. Electromechanical Fundamentals. 3 credits. Prerequisites: Math 103; Co-requisite: Phys 101. The study of fundamental mechanical, hydraulic, pneumatic, and electrical apparatus used in power systems.

202. Technical Drawing. 3 credits. Prerequisite: IT 122. The study of technical drawing techniques to include various projections, pictorials, dimensioning, developments and tolerancing used in business and industry. Students will apply computer aided drafting (AutoCAD) in completing technical drawings.

Students were involved in

203. Production Processes: Manufacturing. 3 credits. Prerequisite: IT 110. Fundamental concepts of processing industrial materials, especially those utilized in manufacturing products, with emphasis on tools and techniques.

204. Industrial Materials. 3 credits. The study of the characteristics, structure, properties and physical nature of organic and inorganic materials for industrial conversion processing; to include wood, metallics, ceramics, polymers, and ceramics laboratory activities.

211. Electric Circuits and Devices. 3 credits. Prerequisites: IT 201 and Math 103 and 105. Concepts, principles, and operational characteristics of electric components and circuits. Hands-on operation and experiments of electric devices and equipment.

212. Principles of Graphic Design and Print Production. 3 credits. Basic concepts, processes, and techniques involved in design image generation and image reproduction for the graphic arts.

213. Production Processes: Construction. 3 credits. Prerequisite: IT 110 or 204 or consent of instructor. A study of material processing methods and techniques utilizing tools and machines leading to the production of constructed assemblies.

223. Applied Synthetics. 3 credits. Prerequisite: Chem 115/115L or 121/121L. A study of

synthetic/polymer materials emphasizing identification of characteristics and properties; and their application as related to industrial products.

450. Senior Capstone. 3 credits. Prerequisite: Senior standing and consent of instructor. The capstone course is designed to integrate coursework covered throughout the student's program in order to demonstrate knowledge and understanding related to the theories, processes, methods and techniques in their area of emphasis. Students will work individually and collaboratively to demonstrate their overall competency in program objectives and their potential as professionals.

Assessments
   a. Student laboratory activities.
   b. Portfolios of student work compiled as a result of the IT 450 Capstone course.

Results

Activity	Exceeds	Meets	Developing	Needs Work
Portfolios	5	3		
Examples of Student work	6	2		

Student Work Samples for 10007.2 (Hard Copy)
      Portfolios (Hard Copy and CD/DVD)
      Examples of student work (Hard Copy)

10007.3 The program requires the study of technology and society including technological effects on society, technological effects on environment, how people shape technological development, and the evolution and history of technology's effects on society. The program uses varied performance assessments of the candidate's understanding and ability to apply that knowledge.

List course number, title and description and any accompanying activities or experiences in which students engage to meet the standard.

The course where students learn about technology and its effects on society is IT 300: Technology and Society. This course is a lecture discussion course that covers a broad range of technological issues and explores the effects or possible effects on society.

300. Technology and Society. 3 credits. A lecture-recitation course emphasizing the various impacts of technology on the individual, society, environment and basic institutions. Technological matrix of various cultures.

Assessments
   a. Tests,
   b. team presentations, and
   c. position papers are the major means of assessment.

Results

Activity	Exceeds	Meets	Developing	Needs Work
Tests	5	3		
Team Presentations	6	2		
Position Papers	5	2	1	

Student Work Samples

Work Samples for 10007.3 (Hard Copy)

Examples of Position Papers (Hard copy)
      Presentation Outlines (Hard copy)
      Tests (Hard copy)

10007.4   The program requires study of design including attributes of design, engineering design, and methods to solve design problems. The program uses varied performance assessments of the candidate's understanding and ability to apply that knowledge.

List course number, title and description and any accompanying activities or experiences in which students engage to meet the standard.

The attributes relating to the design concepts described in this standard are included in two courses in the program. The first course is IT 122: Computer Aided Design/Drafting (CADD) and IT 403: Product Research and Development. The first course, IT 122, is required of all majors while the second course, IT 403, is an elective for all majors.

122. Computer Aided Design/Drafting. 3 credits. This course introduces the student to computer aided design/drafting with AutoCAD. It is a combination of lecture, hands on exercises and drawing problems used in industry and business.

403. Product Research and Development. 3 credits. Prerequisite: IT 203 or consent of instructor. The study of product development and production planning for manufacture through the application of research methodologies, design processes, and prototype development.

Assessments

Measures of content knowledge for the IT 122 course include tests and the activities that apply the basics of CADD techniques to design problems.

Measures of content knowledge for the IT 403 course are focused on tests and the evaluation/assessment of the final project. The evaluation/assessment of the final project has four major components: project uniqueness, drafting, oral report, and written report.

Results

Activity	Exceeds	Meets	Developing	Needs Work
Examinations	4	4		
Reports	5	3		
Drawings	4	4		

Student Work Samples

Work samples for 10007.4 (Hard Copy)

Examples of student drawings for IT 122 (hard copy), copies of examinations for IT 403, (see below) and copies of the final written report with evaluations/assessments for the four components of the final IT 403 project (hard copy).

Test 1 IT 403

10007.5 The program requires the study of abilities for a technological world, including application of design process, use and maintenance of products and systems, and assessment of the impact of products and systems. The program uses varied performance assessments of the candidate's understanding and ability to apply that knowledge.

List course number, title and description and any accompanying activities or experiences in which students engage to meet the standard.

IT 403 is the main course that addresses the application of the design process and the impact of products and systems.

403. Product Research and Development. 3 credits. Prerequisite: IT 203 or consent of instructor. The study of product development and production planning for manufacture through the application of research methodologies, design processes, and prototype development.

Assessments

Measures of content knowledge for the IT 403 course are focused on tests and the evaluation/assessment of the final project. The evaluation/assessment of the final project has four major components: project uniqueness, drafting, oral report, and written report.

Results

Activity	Exceeds	Meets	Developing	Needs Work
Examinations	5	3		
Reports	5	3		

Student Work Samples

Work samples for 10007.5 (Hard Copy)
Copies of examinations for IT 403 (See 10007.4 for examples), and copies of the final written report with evaluations/assessments for the four components of the final IT 403 project. (Hard copy, found in the hard copy file under 10007.4)

10007.6 The program requires the study of the designed world. Areas will include medical technology, agriculture and related bio-technologies, energy and power technologies, information and communication technologies, transportation technology, manufacturing technology, and construction technology. The program uses varied performance assessments of the candidate's understanding and ability to apply that knowledge.

List course number, title and description and any accompanying activities or experiences in which students engage to meet the standard.

Courses that address the topics of this standard are IT 110, IT 300, IT 201, IT 202, IT 203, IT 204, IT 211, IT 212, IT 213, and IT 213.

110. Principles of Industrial Technology. 2 credits. The study of the philosophy and objectives of Industrial Technology with emphasis on the theories, principles, and objectives of technological systems in business, industry, and educational institutions.

201. Electromechanical Fundamentals. 3 credits. Prerequisites: Math 103; Co-requisite: Phys 101. The study of fundamental mechanical, hydraulic, pneumatic, and electrical apparatus used in power systems.

202. Technical Drawing. 3 credits. Prerequisite: IT 122. The study of technical drawing techniques to include various projections, pictorials, dimensioning, developments and tolerancing used in business and industry. Students will apply computer aided drafting (AutoCAD) in completing technical drawings. Students were involved in

203. Production Processes: Manufacturing. 3 credits. Prerequisite: IT 110. Fundamental concepts of processing industrial materials, especially those utilized in manufacturing products, with emphasis on tools and techniques.

204. Industrial Materials. 3 credits. The study of the characteristics, structure, properties and physical nature of organic and inorganic materials for industrial conversion processing; to include wood, metallics, ceramics, polymers, and ceramics laboratory activities.

211. Electric Circuits and Devices. 3 credits. Prerequisites: IT 201 and Math 103 and 105. Concepts, principles, and operational characteristics of electric components and circuits.

Hands-on operation and experiments of electric devices and equipment.

212. Principles of Graphic Design and Print Production. 3 credits. Basic concepts, processes, and techniques involved in design image generation and image reproduction for the graphic arts.

213. Production Processes: Construction. 3 credits. Prerequisite: IT 110 or 204 or consent of instructor. A study of material processing methods and techniques utilizing tools and machines leading to the production of constructed assemblies.

223. Applied Synthetics. 3 credits. Prerequisite: Chem 115/115L or 121/121L. A study of synthetic/polymer materials emphasizing identification of characteristics and properties; and their application as related to industrial products.

300. Technology and Society. 3 credits. A lecture-recitation course emphasizing the various impacts of technology on the individual, society, environment and basic institutions. Technological matrix of various cultures.

Assessments

Examples of student projects, written activities, and IT 110 portfolios. (Hard Copy)

Results

Activity	Exceeds	Meets	Developing	Needs Work
Activity Pictures	7	1		
Written assignments	6	2		
Portfolios	6	2		

Student Work Samples

Work samples for 10007.6 (Hard Copy)

Submitted will be examples of student work to include pictures IT 110 Picture Documentation of student projects/activities, written assignments, and IT 110 portfolios (Hard copy & CD/DVDs).

15

10007.7 The program requires study and experiences based on the following content organizers: resources for technology, design/engineering, inventions and innovations, technology systems, intelligent machines, and technology and entrepreneurship. The program uses varied performance assessments of the candidate's understanding and ability to apply that knowledge.

> List course number, title and description and any accompanying activities or experiences in which students engage to meet the standard.

Courses that address resources for technology are the IT 200 level courses: IT 201: Electromechanical Fundamentals, IT 202: Technical Drawing, IT 203: Production Processes: Manufacturing, IT 204: Industrial Materials, IT 211: Electric Circuits and Devices, IT 212: Principles of Graphic Design and Print Production, IT 213: Production Processes: Construction, and IT 223: Applied Synthetics.

201. Electromechanical Fundamentals. 3 credits. Prerequisites: Math 103; Co-requisite: Phys 101. The study of fundamental mechanical, hydraulic, pneumatic, and electrical apparatus used in power systems.

202. Technical Drawing. 3 credits. Prerequisite: IT 122. The study of technical drawing techniques to include various projections, pictorials, dimensioning, developments and tolerancing used in business and industry. Students will apply computer aided drafting (AutoCAD) in completing technical drawings. Students were involved in 203. Production Processes: **Manufacturing.** 3 credits. Prerequisite: IT 110. Fundamental concepts of processing industrial materials, especially those utilized in manufacturing products, with emphasis on tools and techniques.

204. Industrial Materials. 3 credits. The study of the characteristics, structure, properties and physical nature of organic and inorganic materials for industrial conversion processing; to include wood, metallics, ceramics, polymers, and ceramics laboratory activities.

211. Electric Circuits and Devices. 3 credits. Prerequisites: IT 201 and Math 103 and 105. Concepts, principles, and operational characteristics of electric components and circuits. Hands-on operation and experiments of electric devices and equipment.

212. Principles of Graphic Design and Print Production. 3 credits. Basic concepts, processes, and techniques involved in design image generation and image reproduction for the graphic arts.

213. Production Processes: Construction. 3 credits. Prerequisite: IT 110 or 204 or consent of instructor. A study of material processing methods and techniques utilizing tools and machines leading to the production of constructed assemblies.

223. Applied Synthetics. 3 credits. Prerequisite: Chem 115/115L or 121/121L. A study of synthetic/polymer materials emphasizing identification of characteristics and properties; and their application as related to industrial products.

Courses that address design/engineering are IT 122, IT 202, and IT 403.

122. Computer Aided Design/Drafting. 3 credits. This course introduces the student to computer aided design/drafting with AutoCAD. It is a combination of lecture, hands on exercises and drawing problems used in industry and business.

202. Technical Drawing. 3 credits. Prerequisite: IT 122. The study of technical drawing techniques to include various projections, pictorials, dimensioning, developments and tolerancing used in business and industry. Students will apply computer aided drafting (AutoCAD) in completing technical drawings.

403. Product Research and Development. 3 credits. Prerequisite: IT 203 or consent of instructor. The study of product development and production planning for manufacture through the application of research methodologies, design processes, and prototype development.

The course that addresses inventions and innovations and technology and entrepreneurship is IT 403.

403. Product Research and Development. 3 credits. Prerequisite: IT 203 or consent of instructor. The study of product development and production planning for manufacture through the application of research methodologies, design processes, and prototype development.

The course that addresses technology systems and intelligent machines is IT 373.

373. Manufacturing Automation Systems. 3 credits. Prerequisites: IT 201, 203 and 122 or equivalent. The study of the fundamentals of automation as it relates to automated production environments. Students will examine the forms of computer-based automation systems used in the various areas of a manufacturing system and how systems can be integrated through data communication networks. Topics include NC and CNC programming and systems, computer assisted parts programming, industrial robot configurations, industrial automation applications, and integration of control systems and manufacturing technology.

Assessments

There is a large variety of measures that assess the extent to which this standard is met. Faculty use tests, problem-solving activities, projects, written papers, oral reports, drawings, portfolios, etc.

Results

Activity	Exceeds	Meets	Developing	Needs Work
Drawings	5	3		
Portfolios	6	2		
Reports	5	3		
Examinations	4	4		

Student Work Samples

Work samples for 10007.7 (Hard Copy)

Examples will include drawings (hard copy), portfolios (hard copy in File 10007.2, IT 403 final reports (File 10007.4, and test examples (File 10007.4).

10007.8 The program requires the study of methods of teaching technology education including current trends, activity-oriented laboratory instruction, and authentic application of knowledge and skills. The program uses varied performance assessments of the candidate's abilities to apply their knowledge and skills in teaching situations.

List course number, title and description and any accompanying activities or experiences in which students engage to meet the standard.

The course that addresses the methods of teaching technology education including the Standards for Technological Literacy, assessment, lesson and unit planning, teaching a lesson in an activity oriented classroom, and the expectations for continuing professional development is IT 400: Teaching Technology Education.

400 Teaching Technology Education.
> 3 credits. Prerequisite: Junior Standing and Consent of the Instructor. An analysis of various methods employed in instructional techniques for industry and education. Development of methods and strategies for instruction, use and ordering of instructional materials based on behavioral objectives, and classroom application of instructional techniques; lab activities.

Assessments

Results

Activity	Exceeds	Meets	Developing	Needs Work
Lesson Preparation	8			
Lesson Presentation	8			

Student Work Samples

Work samples for 10007.8 (Hard Copy)

A lesson prepared (hard copy) and presented by the IT 400 class to the North Dakota Technology Teacher's Education Association at the fall 2006 annual conference.

10007.9 The program requires the study and experiences in developing, managing and evaluating technology education programs in schools. The program uses varied performance assessments of the candidate's understanding and ability to apply that knowledge.

List course number, title and description and any accompanying activities or experiences in which students engage to meet the standard.

The IT 400 course: Teaching Technology Education is the course in the program where students study how to evaluate technology education programs in schools. Students are familiarized with the course and program assessment tools found in *Measuring Progress* and *Realizing Excellence* which are part of the professional development packet provided through the International Technology Education Association.

400 Teaching Technology Education.

> 3 credits. Prerequisite: Junior Standing and Consent of the Instructor. An analysis of various methods employed in instructional techniques for industry and education. Development of methods and strategies for instruction, use and ordering of instructional materials based on behavioral objectives, and classroom application of instructional techniques; lab activities.

Assessments

Lecture and discussion were the main means of addressing this topic.

Results

Activity	Exceeds	Meets	Developing	Needs Work
Rubric	8			
Lesson Plan	8			

Student Work Samples

Work samples for 10007.9

Rubric (hard copy)
    Lesson Plan for NDTEA Conference (Hard copy)

10007.10 The program requires the study of the application of technology in instruction, specialty content preparation in educational computing and technology literacy, and the uses of technology-based productivity tools to support instruction and student learning. The program

uses varied performance assessments of the candidate's understanding and ability to apply that knowledge.

List course number, title and description and any accompanying activities or experiences in which students engage to meet the standard.

The primary course where students have the opportunity to address this standard is in IT 400: Teaching Technology Education.

400 Teaching Technology Education.

3 credits. Prerequisite: Junior Standing and Consent of the Instructor. An analysis of various methods employed in instructional techniques for industry and education. Development of methods and strategies for instruction, use and ordering of instructional materials based on behavioral objectives, and classroom application of instructional techniques; lab activities.

Assessments

Use of PowerPoint and videos garnered from the Internet, and.

Results

Activity	Exceeds	Meets	Developing	Needs Work
Lesson Preparation	8			
Lesson Presentation	8			

Student Work Samples

10007.11 Candidate assessment data are regularly and systematically collected, compiled, aggregated, summarized, and analyzed to improve candidate performance, program quality, and program operations. The program disaggregates candidate assessment data when candidates are in alternate route, off-campus, and distance learning programs.

Please refer to the Technology Department Assessment Plan at the following

Link.www.business.und.edu/dept/technology/

No program changes have been made as a result of data gathered to date. However, changes are being made based on observations and changes to the IT 400 class. Several adjustments will be made due to the change in Standards accepted during the 2006-07 academic year in Technology Education

Department of Teaching and Learning Assessment Process:

Data Collection. Data are collected at transition points throughout the program to assess candidate performance, program quality and program operations. The Teaching and Learning Undergraduate Assessment Committee (UGAC) develops an annual schedule for the purposes of data collection. T&L undergraduate faculty who assess critical tasks, staff in the Office of Advising and Admissions and staff in the Office of Field Experience are responsible for submitting data presented in the table below. The UGAC monitors the collection process and follows up in a timely manner when data is missing.

Data Analysis and Reporting. The UGAC is responsible for submitting an annual report to the undergraduate faculty in the Department of Teaching and Learning, the Chair of Teaching and Learning and the Associate Dean for Teacher Education (NCATE Coordinator) based upon a detailed analysis of data collected over the course of the previous year. The Assessment Committee facilitates an annual Assessment Retreat. Faculty discuss the report at the departmental and individual program level and develop a written plan of action designed to address areas of weakness. Should no areas of weakness be found, a written record of faculty discussion leading to this conclusion is created. In between assessment retreats, the UGAC monitors progress in the implementation of the action plan(s). In subsequent retreats, the action plans are revisited and revised in light of the new round of data analysis.

Unit Assessment System for the Education Program

Initial Programs Undergraduate	Upon Admission to Teacher Education	Before Entering Student Teaching	Before Program Completion	After Completion
• Elementary • ECE/Elementary • Elementary/Middle	• GPA • PPST Score • Letter of Application	• Critical Tasks (Child Study,	• Critical Tasks (Mid-term Evaluation,	Assessments: • Graduate Surveys • Principal

	• Dispositions	Multicultural Teaching, Lesson Plan, Beliefs and Practices Statement) • Praxis II Tests • Dispositions	Final Evaluation • Dispositions	Surveys

II. Multicultural/Native American /Diversity Standard

The program requires the study of multicultural education including Native American studies and strategies for teaching and assessing diverse learners.

This response is prepared for all programs approved by ESPB. If you are reviewing an undergraduate or initial program only, please read the sections of this response headed *Initial Programs*. For Advanced or Professional Programs, please read the sections of this response headed *Advanced Programs*. Syllabi, vita and cited electronic work samples referred to in the report may be found in the folder labeled "MC-Diversity Standard."

MULTICULTURAL EDUCATION/NATIVE AMERICAN STUDY

Initial Programs

Opportunity to Address/Meet Standard

> T&L 433: Multicultural Education: All candidates in the Teacher Education Program at the University of North Dakota are required to complete this course (There is also a correspondence course with the same prefix and title which is offered to those who are in non-UND programs. Rarely, an exception is made for a candidate in the program who is unable to take the on-campus course.)
>
> *Course Description*: This class takes an anthropological view of multicultural education. It will help students better understand students in culturally diverse classrooms as well as prepare them to teach about cultural diversity. This class examines several cultures but is particularly interested in American Indians of North Dakota. Those original groups include: Lakota, Dakota, and Nakota, Chippewa, and the three affiliated tribes: Mandan, Hidatsa, and Arikara (see attached sample syllabus TL 433).

Assessments/Results

1. Critical Task: Multicultural Teaching is submitted and assessed in LiveText, an on-line data management system. This Critical Task is a research paper based upon an issue in multicultural education. The paper includes a lesson plan which is assessed to determine candidates' ability to apply what they have learned related to diversity. The task was

piloted in the spring of 2007 and assessed formally for the first time in the fall of 2007.

Initial Programs Critical Task Assessment Results for Multi-Cultural Teaching

Fall 2007 N=90

Teaching & Learning Standards	Does Not Meet	Fulfills Expectations	Exceeds Expectations
1.2 Teacher candidate uses tools of inquiry to develop content knowledge.	13%	56%	30%
1.3 Teacher candidate selects content to encourage diverse perspectives.	13%	53%	33%
6.2 Teacher candidate uses language to promote learning (e.g., use questioning skills, discussion techniques, delivery style, nonverbal cues).	14%	56%	29%
6.3 Teacher candidate uses media and technology as effective learning and communication tools.	13%	36%	30%
6.6 Teacher candidate's communication skills facilitate partnerships with students, families and colleagues.	15%	52%	32%

Standards 1.3 and 6.6 especially target candidates knowledge and dispositions related to diversity. As indicate in the table 84%-86% of candidates meet or exceed expectations in these categories.

2. Mid-Term Showcase: Candidates work in pairs to create a showcase of a culture that includes engaging hands on learning activities.

Fall 2007	**Multicultural Ed**				
T&L 433: Section 1: Midterm Showcase Scores	A	B	C	D	F
N = 30	# 30 100%	0%	0%	0%	0%

3. Native American Reservation Field Trip: The class participates in a field trip, to an

American Indian reservation school K-12. Each candidate is expected to write a 3-5 page paper reflecting on the field experience. At a minimum, the student should provide answers to the following questions after the field experience: (a) What does education and learning experiences mean to these students; (b) Is the educational system ensuring that the diverse needs of those students are met?

The field trip reflection assessment rubric covers three areas:
(a) Focus (i.e. relevant, specific and clear response to the above questions....10 points);
(b) Perspective (i.e. the student reflects on the field trip from a diverse/multiple perspective...10 points);
(c) Language/Grammar (i.e., the students uses appropriate diversity terminology/ language as well as correct grammar...5 points).

TL 433 Section 1:Fall 2007	A	B	C	D
Field Trip Reflection Scores (N=30)	#26 87%	#4 13%	#0	#0

Student Work Samples

1. For candidate work related to the critical task (#1 above), please click on the any of the documents below:

- [Sample 1](#) Does Not Meet Expectations
- [Sample 2](#) Meets Expectations
- [Sample 3](#) Exceeds Expectations

2. A variety of student work samples related to the showcase will be available in the hard copy exhibit room.

Advanced Programs

<u>Opportunity to Address/Meet Standard</u>

EFR 506: Multicultural Education: Candidates who have not taken T&L 433 as undergraduates are encouraged to take this course. As described in the catalog the course is a "review of the conceptual, historical, and theoretical aspects of multicultural education. A major goal will be to provide educators with the processes for incorporating multicultural education into their own education environments to meet the needs of their culturally diverse students and to increase the cultural awareness and sensitivity of all students. North Dakota/Native American issues are primary elements of this course" (pg.249). (Also, see attached sample syllabi: EFR 5061; EFR5062.

<u>Assessments/Results:</u>

Course Grades

Sections 1-4: SU, 2007					
Course EFR 506: Multicultural Education	A	B	C	D	F
N=28	# 26	#1	#0	#0	#1
	93%	3.5%	%	%	3.5%

As indicated by the majority of A's and B's in the chart above, candidates taking this course met or exceeded course goals.

STRATEGIES FOR TEACHING AND ASSESSING DIVERSE LEARNERS

Initial Programs

<u>Opportunity to Address/Meet Standard</u>

T&L 315: Education of Exceptional Students: All candidates in our Early Childhood Education, Elementary Education and Middle Level programs are required to take this course(see attached syllabus T&L 315).

Course Description: "An orientation course, especially for classroom teachers, stressing the identification, characteristics and educational problems of exceptional children" (college catalog p.184).

TEAM Methods: Candidates in Elementary Education, Early Childhood Education and Middle Level Education take a series of methods related courses that require them to demonstrate an ability to accommodate instruction for students with special needs. Initially, candidates are presented with a case of a virtual student. They view a video and review an IEP and create a lesson plan with accommodations for this student (see IEP of Nathan). Next, candidates complete a 60-hour field experience. They select a lesson for assessment that includes accommodations for one or more students in their field experience setting.

Integration of Special Needs: The secondary education program has developed an integrated approach to guide candidates' knowledge about and skill in teaching diverse learners (see Integration of Special Needs within the Secondary Education Program document).

Assessments/Results

Course Grades

Fall 06 - Spring 07					
Course TL 315: Education of Exceptional Students	A	B	C	D	F
N=197	#148	#34	#7	#4	#4
	75%	18%	3%	2%	2%

Over 93% of candidates from spring 2006 to fall of 2007 met or exceeded expectations related to the content of TL315 as demonstrated by the percent of A's and B's awarded.

TEAM Methods: Candidates development and implement a lesson plan and during the 60 hour field experience tied to the methods semester that is submitted and assessed in LiveText, an on-line data management system. INTASC Standard 3 and Program Standard 3.1 are assessed to determine candidates' abilities to accommodate all learners needs. Results from fall 2006-spring 2007 are presented in the table below:

Standard: 3.2 TAAL INTASC 3 Teacher candidate plans and adapts instruction for individual needs	Not Met	Met	Exceeds
Fall 2006	6.4%	70.2%	23.4%
Spring 2007	13.8%	74.2%	12%

During the 2006-2007 academic year 87.2%-94.6% of candidates met or exceeded the standard related to adapting instruction. The faculty reviewed data in May of 2007 and were disappointed in the lower results in the spring semester. It was at this point that the case of Nathan was developed for implementation in the fall of 2007. We hope to see improvements during the 07-08 academic year.

Integration of Special Needs: Candidates development and implement a lesson plan and during the 60 hour field experience tied to the methods semester that is submitted and assessed in LiveText, an on-line data management system. INTASC Standard 3 and Program Standard 3.1 are assessed to determine candidates' abilities to accommodate all learners needs. The Lesson Plan for secondary programs is submitted and scored only in the fall since this is when the methods courses are offered. At the time of this report, no results are available. Results for fall 2007 will be available in the spring of 2008.

Student Teaching Evaluations: Mid-term and final evaluations during the student teaching semester provide additional evidence that candidates in all of our programs address the needs of diverse learners in their classrooms. Cooperating Teachers and University Supervisors complete these evaluations at mid and end term during the student teaching semester. The results for candidates' in the area of exceptionalities in the fall 2006 and spring 2007 are presented in the table below:

INTASC Standard 3: Teacher candidate plans and adapts instruction for individual needs								
	Mid Term N = 86				Final N =86			
Fall 06-Spring 07	Deficient	Developing	Proficient	Not Observed	Deficient	Developing	Proficient	Not Observed
All Programs	0%	30%	58%	12%	0%	10%	75%	15%

As noted in the evaluations 85%-88% of candidates during student teaching are able to adequately address this standard. In addition, 20% of candidates moved from the developing to proficient category by the end of the their student teaching assignment.

Advanced Programs

Opportunity to Address/Meet Standard

> **EFR 506: Multicultural Education:** Candidates who have not taken T&L 433 as undergraduates are encouraged to take this course. The emphasis of the course may vary dependent upon the semester. For example, in the summer of 2007 one section of EFR 506 emphasized issues in special education within the context of the multicultural framework (see syllabus EFR 506).

Assessment /Analysis

> Course Grades

Course	A	B	C	D	F
EFR 506: Multicultural Education: Sec3: SU, 2007	#12	#1	#	#	#1
N=14	86%	7%	0%	0%	7%

> As indicated by the majority of A's and B's in the chart above, candidates taking this course met or exceeded course goals.

> Other important diversity aspects are part of the curriculum in the required courses of EFR 500: Philosophical Foundations of Education, TL 540: Philosophies and Theories of Curriculum, and TL 542: Models of Teaching. In addition, the candidate is required to take an additional three credits of foundations. Typically, they are advised to take EFR 505: Social Foundations of Education or EFR 507 Gender and Education; in either of these latter two courses, candidates study multicultural education, diversity education, and socioeconomic aspects related to access, equality, and equity.

> **TL 590 ST: Children's Literature in the Classroom.** In this course, candidates in the reading specialist and elementary education advanced programs read multicultural literature and critique literature used in classrooms to determine its resonance with all students. Further, students complete projects which explore Native American Literature. The syllabus for TL590ST states the following goal:
> - Expand your knowledge of the wealth of literature available for diverse children in classrooms (NBPTS #2)

> The goal is met through reading and discussing articles and children's literature and by assignments. Sample readings and assignments are provided to illustrate candidate

experiences.

Sample articles on diverse learners (cultural, racial, gender, socioeconomic)

- Enteneman, J., Murnen, T. J., & Hendricks, C. (2005). Victims, bullies, and bystanders in K-3 literature. *The Reading Teacher, 59,* pp. 352-364.
- Livingston, N. & Kurkjian, C. (2005). Circles and celebrations: Learning about other cultures through literature. *The Reading Teacher, 58,* pp. 696-703.
- Louie, B. L. Guiding princiles for teaching multicultural literature. *The Reading Teacher, 59*, pp. 438-448.
- Wason-Ellam, L. (1997). "If only I was like Barbie." *Language Arts, 74*(6), pp. 430-437.
- Yenika-Agbaw, V. (1997). Taking children's literature seriously: Reading for pleasure and social change. *Language Arts, 74*(6), pp. 446-453.

Multicultural and gender-based literature assigned for the course and read by candidates:

- Curtis, C. P. (1995). *The Watsons Go To Birmingham*. Yearling. **ISBN:** 0440414121
- DiCamillo, K. (2000). *Because of Winn-Dixie*. Scholastic. **ISBN:** 043925051X
- Erdrich, L. (1999). *The Birchbark House*. Scholastic. **ISBN:** 0439203406
- Munsch, R. (1980). *The Paper Bag Princess*. Annick Press. **ISBN:** 0920236162
- Ryan, P. M. (2000). *Esperanza Rising*. Scholastic.

Artifacts supplied to illustrate multicultural course experiences are listed here and supplied for perusal.

- PowerPoint by candidate—[Contemporary Native Americans and Literature](#)
- [Multicultural Book Analysis](#)

TL 590 ST: Writing in the Elementary School Classroom. In part this course is designed to increase candidates' ability to effectively teach diverse children to write, respecting development, culture, gender, and individuality. Though meeting a goal such as this is integrated throughout the semester, specific course readings and activities are devoted to the goal. Readings on gender and writing, specifically paying attention to boys, and culturally conscious writing instruction is also addressed. Multicultural and gender-based readings include the following:

- Dworin, J. E. (2006). The family stories project: Using funds of knowledge for writing. *The Reading Teacher, 59*(6), 510-520.
- Dyson, A. H. (1998). Fold processes and media creatures: Reflections on popular culture for educators. *The Reading Teacher, 51*(5). 392-402.
- Fletcher, R. (2006). Boy writers: Reclaiming their voices. (Chapter 10). Portland, ME: Stenhouse Publishers.

- Fu, D. & Shelton, N.R. (2007). Including students with special needs in a writing workshop. *Language Arts, 84*(4), 325-336.
- Newkirk, T. (2000). Misreading masculinity: Speculations on the great gender gap in writing. *Language Arts, 77*(4), 294-300.
- Rubin, R. & Carlan, V. G. (2005). Using writing to understand bilingual children's literacy development. *The Reading Teacher, 58*(8), 728-739.

One artifact supplied to illustrate linguistic/cultural study of writers is a whole class effort to identify ways to support ELLs in the writing classroom. Candidates reviewed numerous books and articles, identified resources, and gleaned specific practical ideas for supporting young writers. The series of charts that evolved from that activity are supplied as an example of the type of learning event that is integrated in the course to learn about supporting multicultural learners in writing.

Programs for Other School Professionals

In addition to the instruction and assessment in the above programs, the following coursework in Educational Leadership and School Counseling attend to multicultural and diversity issues.

Educational Leadership:

Opportunity to Address/Meet Standard: Courses

EDL 514: Personnel, Supervision, and Staff Development: Various in-depth discussions regarding diversity occur (e.g., Native American and the BIA system). EDL 516 Policy and Educational Finance: Candidates conduct research on various schools, locations, and issues. An example of a research project may be an exploration of the funding for a Native American school.

EDL 519: The Principalship: Principals from various schools (including Indian Reservations) discuss the complexity of education and how it affects students, teachers, and communities.

EDL 501: Leadership, Planning, and Organizational Behavior: Studies include shaping school culture, addressing individual and group needs, setting goals and priorities according to the context of the community.

EDL 511: Personal Communications and Ethics: Discussions are held on how culture, age, and socioeconomics influences education.

Assessments Include:

Exams

Research Papers

Portfolios

School Counseling:

Opportunity to Address/Meet Standard: Courses

Coun 518: Group Theory and Process: Addresses the principles and practices of support, task, psycho-educational, and therapeutic groups with various populations in a multicultural context. Includes study of professional issues relevant to group processes, involves participation and leading group experiences.

Coun 531: Psychology of Women, Gender, and Development: This course presents current research and trends in developmental theory, particularly theories pertaining to psychological development of women and men. Issues such as abuse, ageism, depression, eating disorders, emotional experience and expression, heterosexism, feminism, and multiculturalism will be examined as related to the practice of psychology. Learning methods include writing, music, film, group discussion and creative projects.

Coun 532: Multicultural Counseling: "This course offers an introduction to counseling theories and interventions appropriate for American ethnic and non-ethnic minority clients. The values suppositions of various cultural groups will be examined"(college catalog p. 24).

Assessments Include:

Papers

Exams

Presentations

Counselor Preparation Comprehensive Examination (CPCE)

Student Internship Evaluation Forms

CURRICULUM EXHIBIT FORM BASIC PROGRAM
EDUCATION STANDARDS AND PRACTICES BOARD

Institution: University of North Dakota		Major: Technology Education
Credits are:	Semester	
Credits required for degree: 125		
General Studies	**Teaching Specialty**	**Professional Education**
Must total at least 32 credits	Credits required: 41	Must total at least 29 credits
Behavioral Sciences Electives in at least 2 areas from the following departments: Anthropology, A&S, Communication, CSD, Economics, Geography, History, Honors, Humanities, Indian Studies, Music, Nursing, Nutrition, Political Science, Psychology, Recreation and Leisure, Rehab Services, Sociology, Social work, Space Studies, T&L. **9 credits Total**	*Technology Foundation Requirements (17 credit Hours Required)* IT 110 Principles of Industrial Technology (2) IT 122 Computer Aided Design/Drafting (3) IT 201 Electromechanical Funda-Mentals (3) IT 202 Technical Drawing (3) IT 203 Production Processes: Manufacturing (3) IT 212 Principles of Graphic Design And Print Production (3)	T&L 325 Exploring Teaching in Secondary Schools (3) T&L 345 Curriculum Development & Instruction (3) T&L 350 Development & Education of the Adolescent (3) T&L 386 Field Experience, elective (1) T&L 400 Methods & Materials (3) T&L 433 Multicultural Ed (3) T&L 460 Microteaching (3) T&L 486 Field Experience (1) T&L 487 Student Teaching (16) T&L 488 Senior Seminar (1)
Humanities Electives from at least 2 areas in the following departments: Art, EHD, English, Fine Arts, History, honors, Indian Studies, IT, Languages, Music, Philosophy, Political Science, Religion and Theater Arts. **9 credits Total**	*Teacher Certification Foundation Require Ments (21 credit Hours Required)* IT 300 Technology & Society (3) Four courses (12 credits) to be selected from the Technology Education online program at Valley City State University. Courses selected in consultation with an adviser and dependent on Certification Track: Elementary, Middle School or Secondary.	

Natural Sciences Electives in at least 2 areas and 1 lab science from the following departments: Anthropology, Atmospheric Sci, Biology, Chemistry, Computer, Sci, Economics, Geography, Geology, Honors, Humanities, IT, Mathematics, Nutr and Dietetics, Philosophy, Physics, Psychology, Sociology and Space Studies **9 credits Total**	OSEH 440 Industrial Safety (3) IT 450 Senior Capstone (3) The teacher certification program offers students an opportunity to major in Industrial Technology and to complete the Secondary Education program of the Dept of Teaching & Learning. Successful completion of the requirements of both programs qualifies the student for teacher certification in Technology Education. Successful completion of the BSIT Selected Electives section IV requirements must include the following: IT 211 Electric Circuits & Devices (3) IT 212 Principles of Graphic Design & Print Production (3) IT 204 Industrial Materials (3) IT 213 Production Processes: Construction (3) IT 223 Applied Synthetics (3) IT 400 Teaching Technology Education (3) *Selected Elective for Industrial Technology Majors (3 credit hours)* Courses may be chosen from the following Technology Systems area; however, a minimum of one course having each of the third digit 1, 2, and 3 must be included. Electronics & Control Technology Systems	
Symbolic Systems Engl 110 Composition (3) Engl 120 Composition (3) Comm 110 Public Speaking (3) **OR** Engl 125 **OR** Advanced Composition Course **9 credits Total**		

	IT 211 Electric Circuits & Devices (3)	
	IT 301 Microelectronic Circuits (3)	
	IT 311 Microcomputer Hardward (3)	
	IT 341 Digital Integrated Circuits (3)	
	IT 411 Integrated Mechanical Fluids Systems (3)	
	IT 451 Control Systems	
	Graphic Communication Technology Systems	
	IT 302 Web Page Design (3)	
	IT 322 Fundamentals of Photography (3)	
	IT 332 3D Design (3)	
	IT 422 Digital Photography & Imaging (3)	
	IT 442 Desktop Publishing (3)	
	IT 452 Multimedia Production	
	Manufacturing Technology Systems	
	IT 204 Industrial Materials (3)	
	IT 213 Production Processes: Construction (3)	
	IT 223 Applied Synthetics (3)	
	IT 373 Manufacturing Automation Systems (3)	
	IT 403 Product Research & Development (3)	
	Industrial Technology General Electives	
	IT 397 Cooperative Education in Industrial Technology (3)	
	IT 404 Materials Testing (3)	
	IT 412 Design/Drafting (3)	
	IT 493 Workshop (1-6)	
	IT 497 Directed Studies in Industrial Technology (1-4)	

	Total		Total		Total

ESPB does not advocate, permit, nor practice discrimination on the basis of sex, race, color, national origin, religion, age or disability as required by various state and federal laws.