1. MISSION AND DEGREE

1.1 Describe how the program relates to UW-Stout's Mission and Goals.

The B. S. in Technology Education (TE) program aligns with UW-Stout’s mission and goals in several ways. The program leads to a degree in education related to technological literacy (http://www.iteaconnect.org/TAA/PDFs/ListingofSTLContentStandards.pdf), education and industry through experiences that include active learning, problem solving and promotes human and interpersonal development. The TE program supports UW-Stout’s mission (http://www3.uwstout.edu/geninfo/mission.cfm) with the integration of humanities, arts, and science courses into the program. Inclusion and Multiculturalism courses included within the program helps strengthen the way the TE program supports UW-Stout’s mission. Program revisions in 2005, 2007 and 2009 have responded to the changes in the profession and within the state of Wisconsin. Courses within the program serve both the Science Education and the TE programs. Math and science requirements have been increased. Project Lead the Way (PLTW) training (http://www.pltw.org) for pre-service teachers has been integrated into the TE program. These efforts, the resulting partnerships and the associated lab remodeling projects support UW-Stout’s goals 1, 3, and 6 (see next page). Technology for Elementary School Children, Pre-Student Teaching, and Student Teaching places students in school settings where they are actively engaged in hands-on teaching strategies, lab settings, problem-based and experiential learning activities. These classes help support UW-Stout’s goals 2, 3, 5, 8 and 9 listed on the next page.

Professional development hours and activities integrated into Introduction to Technology and Science Education, Middle School Technology Education and Pre-Student Teaching enable students to become involved with mid-level and high school students, other colleges at the UW-Stout campus, and high school personnel by asking pre-service candidates to help supervise and judge competitive events for mid-level and high school-level students. In addition the TE program hosts the TECA (Technology Education Student Association) professional student organization which focuses on connecting students through leadership, fellowship, and professional responsibilities. Members efforts in coordinating and organizing competitive events, working with the community, participating in conferences, fostering peer relationships and recruiting efforts in schools supports UW-Stout’s goals 2, 3, 4, 5, 8 and 9 (http://www.iteaconnect.org/Membership/Councils/TECAbylaws.pdf; http://uwstoutteca.jimdo.com/).

During recent years the program director has continually strived to rebuild and expand mutual partnerships at the local, state and regional level. Relationships have been established and maintained with the Wisconsin Technology Education Association, the Minnesota Technology Education Association, and the Iowa Industrial Technology Education Association. The program director serves on advisory committees for local high schools, the Chippewa Valley Technical College, and the Project Lead the Way State Leadership Team. Ongoing relationships have also been established with personnel from
Wisconsin’s Department of Public Instruction, Gateway Technical College, the University of Wisconsin-Platteville, and with faculty and staff on UW-Stout’s campus. These relationships provide mutual support and feedback that help refine and improve the TE program. These activities support UW-Stout’s goals 1, 3, and 7.

Mission Statement

The mission of the University of Wisconsin-Stout is a career-focused, comprehensive polytechnic university where diverse students, faculty and staff integrate applied learning, scientific theory, humanistic understanding, creativity and research to solve real-world problems, grow the economy and serve a global society. (http://www3.uwstout.edu/geninfo/mission.cfm)

UW-Stout’s Enduring Goals (http://www3.uwstout.edu/geninfo/stratplan.cfm)

1. Offer high quality, challenging academic programs that influence and respond to a changing society.
2. Preserve and enhance our educational processes through the application of active learning principles.
3. Promote excellence in teaching, research, scholarship and service.
4. Recruit and retain a diverse university population.
5. Foster a collegial, trusting and tolerant campus climate.
6. Provide safe, accessible, effective, efficient and inviting physical facilities.
7. Provide responsive, efficient, and cost-effective educational support programs and services.

Focus 2015 Goals (http://www3.uwstout.edu/geninfo/stratplan.cfm)

8. Develop knowledge, respect and validation of differing values, cultures and beliefs in students, faculty and staff.
9. Expand early and ongoing experiential learning opportunities including undergraduate applied research and entrepreneurship.
10. Further develop and execute integrated enrollment management.
11. Focus on Sustainability: Implement key elements of the president’s Climate Commitment and Educational and Applied Research Initiatives.

2. DESCRIPTION OF THE PROGRAM

2.1 Curriculum Design

The Technology Education program consists of three main areas of coursework that prepares individuals for Wisconsin 220, Technology and Pre-Engineering, licensure. This includes a general education component, a professional core and technical content. A 2005 and a 2007 program plan were in effect for this PRC report. Information for the new 2009 program plan is included for comparison. A breakdown of
the coursework components in each of these plans follows:

<table>
<thead>
<tr>
<th>Program Plan Year</th>
<th>2005</th>
<th>2007</th>
<th>2009</th>
</tr>
</thead>
<tbody>
<tr>
<td>General Education</td>
<td>42 credits</td>
<td>43-44 credits</td>
<td>44 credits</td>
</tr>
<tr>
<td>Professional Core</td>
<td>44 credits</td>
<td>46 credits</td>
<td>46 credits</td>
</tr>
<tr>
<td>Technical Content</td>
<td>40 credits</td>
<td>38 credits</td>
<td>38 credits</td>
</tr>
</tbody>
</table>

2.1.1 Program Objectives

Objectives of the program on file as approved by the university curriculum committee follow. Upon completion of the program, graduates from the B.S. degree in Technology Education will:

1. Understand the central concepts, tools of inquiry, and structures of technology and can create learning experiences that make these aspects of subject matter meaningful for students.

2. Understand how young people learn and develop, and can provide learning opportunities that support their intellectual, social, and personal development in the context of technology education.

3. Understand how students differ in their approaches to learning and create instructional opportunities that are adapted to diverse learners under the auspices of technology education.

4. Understand and use a variety of instructional strategies to encourage students’ development of critical thinking, problem solving, and performance skills to prepare for life in a technologically sophisticated society.

5. Be able to use an understanding of individual and group motivation and behavior to create a learning environment that encourages positive social interaction, active engagement in learning, and self-motivation.

6. Be able to use knowledge of effective verbal, nonverbal and medial communication techniques to foster active inquiry, collaboration, and supportive interaction in the technology education classroom and laboratory.

7. Be able to design instruction based upon sound knowledge of technology, related disciplines, students, the community, and the goals of public education.

8. Understand and use formal and informal assessment strategies to evaluate and ensure the continuous intellectual, social, and physical development of the learner in context of technology education.

2.1.2 List the indicators that are monitored to determine the need for program revision, including but not limited to program enrollment, student retention or student graduation rates.

The latest program revision (2009) was driven by a data collection process that monitored indicators at varying intervals. This included data collected on an ongoing basis each semester, data collected annually, data collected over long-term intervals and special projects/assessments used to drive the decision making
process. These indicators are highlighted in the following paragraphs.

Data is collected formally on an ongoing basis using weekly admissions reports from the Admissions/School Relations office which provides weekly admissions reports. Advisory committee input occurs during scheduled fall and spring meetings. Stakeholders in Project Lead the Way (PLTW teachers, state committees, grant agencies) as well as Wisconsin Department of Public Instruction data and guidelines (PI#34) also inform the program revision process. Informal and ongoing conversations with current TE students, during advisement day sessions and during student teaching seminars, provide feedback that helps inform the program revision process. TE program personnel are engaged with the professional community and hold leadership positions at the local, regional, and national level which also informs the program revision process.

Data is collected annually via the School of Education’s unit-level assessment system. The program monitors student progress by collecting data on students’ knowledge, skills, and dispositions. Data reviewed and reported annually includes the Educational Testing Service’s Pre-Professional Skills Test (PPST 5710-Reading; 5720-Writing, and 5730- Math), Praxis II content area exam 590 for Technology Education, Benchmark Interview ratings for BM I (entrance into the School of Education/TE program), Benchmark II (before student teaching), and Benchmark III (at the conclusion of student teaching). Student teachers are assessed by their cooperating teachers at the end of their student teaching experience. These Student Teaching Performance ratings are included in the annual Assessment in the Major (AIM) report which can be found at (http://www3.uwstout.edu/provost/aitm.cfm). The Educational Benchmarking Inventory has been administered to exiting student teachers during the fall semester and spring semester since 2003. Fourteen categories related to the program and university are assessed and included in the AIM report.

Longitudinal data collection is completed by UW-Stout’s office of Budget Planning and Analysis. The Alumni Follow-up Survey is administered every two years to graduates receiving undergraduate degrees after one year and after five years. An Employer Follow-up Survey is sent every two years. Data from these surveys relates to the competencies, job satisfaction, and the TE program and graduates’ preparedness. Data from these surveys can be found in the AIM report.

Data that informs program revisions is also collected as the result of special requests or as a result of special projects. Program enrollment numbers from 1973 to the present, enrollment and placement rates are provided by the Budget, Planning and Analysis office. Statistics from the U.S. Department of Education Office of Postsecondary Education Policy & Budget Development Staff (March 2008) and the New Wisconsin Promise Data from Wisconsin’s Department of Public Instruction (2007) were reviewed as the new dual B. S. in Technology and Science Education program went through the approval process during the 2008-2009 academic year. Data from this report helped inform the 2009 TE program that concurrently made its way through the approval process. In 2008 a Curriculum Incubation Proposal titled BS Technology Education Program Revision was funded. The project, carried out by the program director, looked at the NCATE (National Council for Accreditation of Teacher Education) certification process, reviewed national and state standards, Technology Education job postings, considered secondary schools receiving Carl Perkins funding related to Career and Technical offerings, and compared UW-Stout TE program offerings to other universities around the United States that offered Technology Education programs. The final report for the BS Technology Education Revision is attached electronically as Final Report Technology Education Curriculum Incubation. One of the results of the curriculum incubation project was a Technology Education Program Improvement Survey. Ninety-three survey responses from practicing classroom teachers helped drive the 2009 program revision and continuing efforts to improve
the program. Finally, in response to the program director’s specific request, Paul Girolamo, an industry member of the TE advisory committee prepared a *Growth of Technical Careers in Wisconsin and Eastern Minnesota* (2009) report that helps inform the program revision process.

2.1.3 **What distance educational opportunities are provided in your program?** Does the UWSA "Distance Education Standards for Academic and Student Support Services" apply to your program? If so, what evidence of educational effectiveness exists for these experiences? What does this evidence show?

A program is considered to be distance education when fifty percent or more of the content is delivered via distance education. The TE program does not offer distance delivery within the professional component that is under the control of the program director. Most TE majors take courses using face-to-face delivery. Some transfer students and non-traditional students will take classes before transferring to UW-Stout. The courses available via distance education and those taken through other institutions lie outside this program director’s control.

A number of general education courses that meet the criteria for the TE program are taught via distance education. These general education courses can be found at [http://www3.uwstout.edu/de/upload/OnlineCoursesGridNumbers.pdf](http://www3.uwstout.edu/de/upload/OnlineCoursesGridNumbers.pdf). Courses offered via distance education include ENGL 101 Freshman English-Composition, ENGL 102 Freshman English – Reading & Writing, SPCOM 100, Fundamentals of Speech, STAT 130 Elementary Statistics, PE 148 Relaxation PE 129 Golf, FN 102 Nutrition for Healthy Living, BIO 128, Community Health, MUSIC 132 Music in Our World, LIT 260 Modern American Literature, HIST 210 Modern World History, PHIL 235 General Ethics, ECON 210 Principles of Economics I, SOC 110 Introduction to Sociology, PSYCH 110 General Psychology, FN 222 Food Technology and BIO 210 Biotechnology Issues. The Academic Quality Improvement Program (AQIP) found at [http://www3.uwstout.edu/aqip/index.cfm](http://www3.uwstout.edu/aqip/index.cfm) and the 2005, 2007, and 2009 Systems Portfolio found at [http://www3.uwstout.edu/aqip/upload/aqip_09.pdf](http://www3.uwstout.edu/aqip/upload/aqip_09.pdf) provide information relative to the UWSA *Distance Education Standards for Academic and Student Support Services*. Further evidence that UWSA standards are met can be found by visiting UW-Stout’s *Online and Distance Education* website [http://www3.uwstout.edu/de/index.cfm](http://www3.uwstout.edu/de/index.cfm) and UW-Stout’s *Distance and Online Learning Services* [http://www.uwstout.edu/lib/de/index.html](http://www.uwstout.edu/lib/de/index.html).

2.1.4 **Give examples and explain the ways in which the program committee functions and contributes to the program.**

The program advisory committee meets two times per year. It is made up of key faculty in the program, student representatives, practicing teachers, technical college representatives, and industry representatives. A list of current members can be found at [http://www3.uwstout.edu/provost/progcommittees.cfm](http://www3.uwstout.edu/provost/progcommittees.cfm). The program director develops the meeting agenda and chairs the meeting. Information during these meetings is provided by the program director, lab managers, TECA (Technology Education Collegiate Association) representatives and guest presenters when applicable. The agendas follow a pattern of providing lab updates, update on TECA and student activities, program issues/information (enrollment, marketing, NCATE reviews, AIM data, fall conferences) and ending with Project Lead the Way information/issues (certification visits, equipment, implementation). The program director contacts individuals on the program advisory committee with special requests on an as-needed basis.
The TE advisory committee has provided feedback regarding Project Lead the Way curriculum as it is integrated into the TE program. Suggestions for marketing and developing partnerships are discussed during meetings. In addition members have provided input for a program revision and helped analyzed specific strengths and weaknesses of the program using AIM reports to inform the discussion. Committee members have helped provide direction relative to the inclusion of technical content and machine/tool safety/maintenance within the program. Most recently the advisory committee provided input relative to the Wisconsin Department of Public Instruction’s PI#34 compliance review and the NCATE accreditation visit and also participated in the fall 2009 review process. Individual members have supplied data relative to K-12 enrollment numbers in technology-related programs and prepared and extensive review of technical career growth for Wisconsin and east-central Minnesota to be used to drive program decisions and inform teaching practice. Students participating in the advisory committee have taken ideas back to TECA and have begun implementing program marketing initiatives to help promote Stout’s TE program.

2.1.5 UW-Stout “programs are presented through an approach to learning which involves combining theory, practice and experimentation” (Mission Statement). Briefly describe the components of your program where students participate in scholarly activity including research, scholarship, development and creative endeavor.

The TE program attempts to incorporate real or simulated experiences within the professional core to the greatest degree possible.

Students spend fifty hours in a field setting participating in one-on-one or small group interactions with ethnic minority and various socio-economic groups. The course is designed to connect theory to practice specifically related to teaching. In TECED 325 students design a lesson that is delivered in elementary settings. In order to accomplish this students create suitable activities and develop teaching experience. In TECED 360 students observe and analyze classrooms and develop/deliver lessons, and create teaching aids. During TECED/STMED 460 students develop and deliver lessons different types of lessons in a simulated classroom setting. Lesson delivery is self-assessed and critiqued by peers and the course instructor. The culminating experience to the program is student teaching where students apply the theory they have learned in a teaching setting. During this experience teacher candidates create a Best Practices unit. The unit incorporates applied research in as a unit of instruction with accompanying artifacts is developed, pre-assessments and post-assessments are administered and teaching effectiveness is evaluated and presented.

Starting three years ago the expectation of a professional development component was incorporated into the program. This professional development expectation is written into the 2009 program plan and is now incorporated into STMED/TECED 160, TECED 340 and TECED 360. The expectation is that students will participate in professional development activities (TECA participation, TECA officers, coordinating or helping with competitions aimed at secondary students, attending/presenting at conferences, writing articles, and the like). TE students are increasing their marketability while obtaining these professional development hours by helping with events such as First Lego League, Skills USA, tutoring at local schools, developing marketing materials for the TE program, developing lab activities for the program, and so forth. Participation in the TECA organization grew from four students in the fall of 2006 to over thirty active members in the fall of 2009. In addition to helping with aforementioned activities TECA members lead the organization of the SMV competition and the Rube-Goldberg competition which brings hundreds of students to UW-Stout’s campus each year. Helping with these events provides students with real-life experiences in fund-raising, interfacing with the community, networking with teachers in the field, and student recruitment. The organization also helps develop a sense
of community which may help contribute to retention rate within the program.

2.1.6 Does your program currently have an accreditation or certification agency that reviews the program? If so, which agency and to what extent do they influence the structure of the curriculum?

UW-Stout’s TE program is required to meet or exceeded the Wisconsin Department of Public Instruction’s (DPI) ten educator standards for teacher development and licensure (http://dpi.wi.gov/tepdl/stand10.html) and the Licensure Program Guidelines (http://dpi.wi.gov/tepdl/iheguidelines.html) outlined under Public Law 34 (PI34). The TE program is currently under review by both Wisconsin’s Department of Public Instruction and the National Council for the Accreditation of Teacher Education (NCATE). The 2009 DPI Licensure program report can be found at http://www.uwstout.edu/soe/NCATE/DPIProgramReports.html and UW-Stout’s reports with accompanying exhibits can be found at http://www.uwstout.edu/soe/NCATE.html.

Wisconsin’s DPI influences the UW-Stout’s Technology Education program to a large extent. The program must provide evidence that the TE pre-service candidates meet the PI34 licensure program guidelines and the ten teacher development standards. The TE program is required to provide pre-service teacher candidates with experiences that meet PI34 guidelines and ten educator standards. An assessment system administered and maintained by the UW-Stout’s School of Education provides evidence that pre-service candidates show growth and have demonstrated competency related to the standards and licensing guidelines.

2.2 Faculty/Academic Staff Expertise

2.2.1 List the key people in the curriculum. A key instructor is one who teaches at least one required professional course in your program.

The program currently has three full-time and one part-time tenure/tenure-track instructors delivering the program’s courses (http://www.uwstout.edu/soe/soelisting.html).

Dr. Sylvia Tiala is the current program director for both the BS in Technology Education and the BS in Technology and Science Education programs. She currently teaches introductory STEM (Science, Technology, Engineering, and Math) courses, a middle school technology education course, coordinates pre-student teaching and student teaching field experiences and supervises student teachers. In addition she has been responsible for coordinating efforts to integrate Project Lead the Way (PLTW) into specific courses for three years and into the Technology Education program for the past two years. She currently holds an industrial technology teaching license from the state of Iowa.

Dr. David Stricker is the current program director for the MS in Technology Education. He currently teaches curriculum methods and assessment and lab/classroom management courses for the STEM program. He also supervises pre-clinical field experiences and supervises student teachers. Dr. Stricker was hired on a part-time basis in the 2007-2008 academic year, on a full-time basis for the 2008-2009 academic year and as a full-time tenure track faculty in the fall of the 2009-2010. He holds a current technology teaching license from the state of Minnesota.

Dr. Brian McAlister is currently the coordinating chair of the School of Education. He is the past
program director for both the master (2001-2008) and bachelor (2003-2007) Technology Education program. He was co-principal investigator for the National Center for Engineering and Technology at UW-Stout. Before taking over duties related to his current position he taught curriculum and methods, courses, introduction to Technology Education, lab and classroom management courses and supervised pre-student teaching and student teaching experiences.

Dr. Ken Welty is a past program director for the BS in Technology Education (1992-2004). He was co-principal investigator for the National Center for Engineering and Technology at UW-Stout. He teaches methods, curriculum development, student assessment, and elementary technology education courses for the program. He has also developed curriculum for pre-engineering education, curriculum and instruction for middle school technology education, designing technology education learning activities, and supervised student teachers.

Dr. Kevin Mason was hired in the fall of 2006 as the program director for the Science Education program on a .25 FTE academic staff contract. He is currently on a .5 FTE faculty contract teaching TECED/STMED 390 Lab and Classroom Management and other courses related to the Science Education program. Dr. Mason holds a current Wisconsin teaching license in Chemistry (610), Physics (625), and Physical Science (637) for grades 7-12.

2.2.2 What additional areas of faculty/academic staff expertise are currently needed?

The BS in Technology Education (BSTE) program relies on 41 general education courses to provide a broad foundation for its pre-service candidates. The BSTE program is housed in the College of Education, Health and Human Sciences and depends on the School of Education to provide thirteen credits of professional development courses outside of the program for Technology Education pre-service candidates. In addition to instructors who teach general education courses and education courses, the BS in Technology Education program and the infused Project Lead the Way (PLTW) curriculum rely on the STEM College and the College of Management to deliver its course offerings. Thirty eight credits of technical courses and four area of PLTW training require the expertise of STEM faculty to deliver technical content at least once per year. The BSTE program director relies on the four PLTW trained faculty and the chair of the Engineering and Technology department and the dean/assistant dean to facilitate efforts related to the implementation of PLTW. Nine credits of technical courses and two faculty members are required to offer courses for the BSTE program and PLTW courses. The BSTE program director relies on two trained faculty, the chair of Operations and Management department, and the assistant dean of the College of Management to facilitate efforts related to implementing PLTW.

In the fall of 2006 a middle school Technology Education lab was established in the Communication Technologies building to support a newly implemented Project Lead the Way program. A lab manager was hired to in the fall of 2007 to oversee the lab, implement safety procedures, inventory equipment, establish laboratory budgets, hire student workers, and order supplies. Barb Bauer, the lab manager, is a graduate of Stout’s BSTE program and has several years of teaching experience. She is an invaluable asset in supporting courses, helping students and faculty, working with vendors, and providing input into the program.

An E-portfolio manager was in place to provide instruction related to E-portfolios for all students in the School of Education. The person hired and trained student workers, delivered training to students, ordered supplies and materials for the E-portfolio lab, assigned and managed E-portfolios, maintained equipment and inventories necessary to support the E-portfolio lab, hired and trained student workers and
provided technical expertise to staff when feasible. The E-portfolio manager has been reassigned to new duties relative to coordinating the School of Education’s assessment system and accreditation visits. There is an ongoing need to make sure that the training and help needed to maintain and run the e-portfolio lab is in place.

A part-time secretary supports the BSTE program. The secretary currently helps facilitate the procurement of data relative to requests, organizes files, coordinates promotional mailings, and takes meeting minutes in support of the program.

A Coordinator for UW-Stout’s participation in the Space Grant Consortium provides information related to STEM activities to STEM faculty at UW-Stout. This person forwards key information related to Space Grant opportunities and funding. Information forwarded by the coordinator is relayed to TE students. Students in the TE program are expressing interest in and applying for activities related to the space grant initiatives. The opportunities forwarded by the Space Grant Coordinator provide additional, real-world, relevant opportunities to the TE pre-service candidates.

While acknowledging that TECA students are not faculty/staff, the program director feels it is imperative that students’ contribution to the program be recognized. Leaders in the TECA organization help market the program, build a community of learners, and coordinate activities that bring hundreds of potential students, parents and community members to the UW-Stout campus. TECA students are helping coordinate field trips, bring in guest speakers, present at conferences, and reinforcing alumni networks through their varied activities. Their contribution to the program should neither be taken for granted nor overlooked.

Program faculty members express a need to obtain more training relative to integrating STEM into the current professional teacher education core. The technology teacher courses included science students beginning in the fall of 2008. Math students are scheduled to be included into some of the core education courses beginning in the fall of 2010. More training on best practices for STEM education, methods for teaching STEM, and resources/reference materials relating to STEM is needed for program faculty to be effective in delivering instruction. Resources and training will also be needed for program faculty if STEM and TECED courses are offered via distance delivery.

2.3 Facilities

2.3.1 What special facilities and or capital equipment currently available are utilized and how do they strengthen this program? What additional facilities (special classrooms, labs, additional space involving minor construction) have been requested and has that been filled?

The Technology Education (TE) program is housed in the College of Education, Health, and Human Sciences and resides within the School of Education. Offices, classrooms and labs are housed in the Communication Technologies (CT) building which is shared with the Graphics and Communication Management, Media, Technology Education, Career and Technical Education and Training and Development programs. It is connected to Fryklund Hall which houses many of the supporting courses for the TE program. This arrangement is advantageous as it provides ease of access to labs, instructors, and administrators who support the program but with whom no regularly-scheduled meetings are orchestrated. This arrangement strengthens ties across disciplines and allows pre-service candidates an opportunity to build relationships across programs.
Offices for three Technology Education faculty and a work area for students (CT 224C, CT 224D, 224N) an office for a Science Education faculty member and STEM secretary (224B) as well as equipment storage is located in the northeast corner of the building. Instructional facilities include a classroom which seats approximately fifty students (CT 224) with available resources for some lab-related activities, high-speed wireless Internet, and whiteboard space. This classroom is the result of a lab modification proposal introduced in the fall of 2006 and completed in the fall of 2008. A request was submitted in the fall of 2009 to replace desks that had been donated for student use a number of years ago.

A lab facility adjacent to the classroom was also part of the lab modification proposal. It was also finished in 2008. The lab facility includes modular labs that can be reconfigured to provide multiple learning environments that simulate middle school technology education labs. It includes thirteen computers running modular activities with supporting curricular material and hardware. The lab also includes a room with table-top machines (drill press, grinder), water tunnels, wind tunnels, robots, mechanisms, and other equipment. The lab helps support efforts to integrate Project Lead the Way (PLTW) into the TE curriculum in response to a grant awarded to the program by the Kern Foundation. The lab has helped to support PLTW components of communication and manufacturing courses. It serves as a study area for TE students and has helped support TECA (Technology Education Collegiate Association) activities and develop a setting for an informal learning community. During the first year (2007-2008) of existence the lab supported 230 students. During the 2008-2009 academic the lab supported 1552 students which did not include the forty students using the lab bi-weekly for TE courses and students using the lab in conjunction with TCS-304 (digital electronics). The School of Education has been instrumental in providing support to staff and maintain the classroom and labs.

Students in the TE program also used the E-Portfolio lab housed on the north side of the Communication Technologies building. The lab includes computers, scanners, video cameras for micro-teaching as well as software and technical support relative to creating and maintaining e-portfolios. The program director is not aware of any plan to provide for repair or replacement of items housed within the lab.

It is a challenge for the TE program to receive the guaranteed and necessary funding to maintain the labs as they currently exist. Labs require support from lab assistants, scheduled upgrading, repair and replacement. There is not a plan in place at the current time to support the aforementioned labs other than through the lab modification process which provides no guarantees for lab support. There are a few opportunities to request smaller items (under $500) to upgrade labs or support research.

Upgrades to existing facilities were requested during the latest round of lab modification proposals. Replacement desks and chairs were requested to replace the donated furniture in the CT 224 classroom. Currently desks are falling into a state of disrepair leaving some student with inadequate seating in the classroom. Additionally, the current desks are not conducive to providing a flexible learning environment that instructors can modify to demonstrate teaching techniques. An eye wash station has been requested for the 230 lab. A request to strip the 230 lab of peeling paint was also made. The associate dean of the CEHHS has collected the necessary information to support the request but no feedback relative to the request has been given to date. There is an effort to improve the visibility of the TE program, provide students with program-related information, and to provide students with relevant teaching experience by hanging bulletin boards in the Communication Technology hallway for which students are responsible for updating. The request for more bulletin boards to support instruction was denied as budget constraints became a reality. A request to remove old carpet from the wall of the Communication Technologies building was submitted last year with the permission of appropriate department chairs and dean of the
STEM college. The program director is unaware of the status of this request which was designed to improve the image, and help marketability, of the TE program.

There is a concern about the future of lab facilities, allocations and lab support. In order to be proactive, implement up-to-date instructional approaches, and market programs, the TE labs need to stay current with hardware, software applications, instructional technologies, furniture, and lab equipment. A proactive plan of support needs to be implemented to avoid the necessity of implementing a reactive solution for repair, replacement and upgrades to labs and instructional facilities.

2.4 Resources for the Program

2.4.1 Evaluate as to currency/up-to-datedness, quality, relevance, and quantity of the library resources to support the program. List or describe any information or service needs created over the past three years by concentration and course changes and include a brief statement as to how these needs have been met by the library.

Library personnel and library resources support the Technology Education on an ongoing basis. Technology Education faculty rely on library personnel to introduce library resources in introductory TE courses. An overview of library resources available to the Technology Education program is provided by Cory Mitchell (EMC Librarian) in the following section.

University Library Collection (Non-Periodical)

The University Library collection in support of the Technology Education program at UW-Stout reflects the library’s emphasis on selecting materials with a direct relationship to the courses and programs offered by the university. A search of the online Stout Library Catalog in subjects directly related to technology education results in over 30,000 titles, including more than 818 titles in the Educational Materials Center, a specialized collection of curricular materials that support all teacher education programs at UW-Stout. In addition to the specific area of technology education, the related subjects of general education, science, engineering, manufacturing, transportation, automotive, technology systems, educational technology, construction, energy, materials, electronics, mechanics, metals, and carpentry are covered by the University Library’s collection.

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<tr>
<td>Technology Education related</td>
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<td>818 items (est.)</td>
</tr>
</tbody>
</table>
University Library Collection (Periodicals)

General Indexes and Databases (includes education and technology education)

- EBSCOhost
  - Academic Search Complete – 7,100 full text titles, indexing and abstracts of 11,200 journals
  - Masterfile Premier – 1,700 full text full text titles, 500 full text reference books
- Emerald Library – 190 full text titles
- JStor – 365 full text titles
- Project Muse – 632 full text titles
- Web of Science (Citations/Abstracts)
  - Social Science Citation Index – 1,950 titles
- WilsonWeb
  - Omnifile Full Text Mega – 1,996 full text titles
  - Reader’s Guide Full Text – 212 full text titles
  - Social Sciences Full Text
- Open J-Gate (free) – 6,108 full text titles
- Directory of Open Access Journals (DOAJ) (free) – 4,475 full text titles

Technology, Engineering, and Science Indexes and Databases

- EBSCOhost
  - Science Reference Center
  - Environment Complete
  - GreenFILE
- Engineering Village 2
- IEEE Xplore
- Web of Science (Citations/Abstracts)
  - Science Citation Index Expanded
- WilsonWeb
  - Applied Science Full Text
  - General Science Full Text

Education Indexes and Databases

- British Education Index (free)
- EBSCOhost
  - ERIC (317,000 full text ERIC Documents + 1,017 journal titles)
  - Professional Development Collection – 520 full text journals, 200 educational reports
  - Education Research Complete – 1,200 full text titles, indexing and abstracts 2,100 journals, 500 full text book and monographs
  - Education Administration Abstracts – 66,000 total records
  - Mental Measurements Yearbook
  - PsycINFO
  - PsycArticles
- Kraus Curriculum Development Library – 3,500 full text documents, 7,500 documents indexed
- WilsonWeb
  - Education Full Text – 388 full text titles
  - ERIC
E-Books
- Books 24x7 – 6,227 titles
- Credo Reference – 495 titles
- Knovel Library – 1,500 titles
- NetLibrary – 10,000 titles
- Safari Tech Books – 221 titles
- University of California Press e-Scholarship Editions (free) – 500 titles

Periodicals Access

The University Library’s Periodicals collection (print) includes over 55 technology education related periodical titles (print). The library has 594 general education periodical titles (print), 445 science periodical titles (print) and 187 engineering periodical titles (print). The library also provides access to over 1,054 education periodicals (print and full text online); 1,841 engineering periodicals (print and full text online); 1,126 information technology periodicals (print and full text online); 348 materials science & metallurgy periodicals (print and full text online); and 348 telecommunications technology periodicals (print and full text online). Please note that these numbers are estimates and that each subject category described previously will have some periodical title overlap. For example, the same title may be counted in both the technology education and general education categories.

Many of the University Library’s resources (including the indexes and databases) are accessible on the World Wide Web through the University Library Homepage: www.uwstout.edu/lib  The University Library uses the SFX link resolver software to help students easily locate items. To help promote resource discovery the library provides patrons access to the federated search engine MetaLib (SuperSearch) that allows simultaneous searching of multiple vendor databases and the library’s online catalog. The University Library also participates in a robust interlibrary loan (ILL) document delivery system that provides patrons access to additional periodical articles.

Online Subject and Reference Guides

Over 100 online Subject and Reference Guides have been developed and are maintained by librarians. The University Library Subject and Reference Guides can be found at: http://libguides.uwstout.edu/browse.php#b  The Subject and Reference Guides are used for reference service and library instruction in the Technology Education classes.

The following online Subject Guides support the Technology Education Program:
- Education Resources
- K-12 Education
- Technology Education
- Science Education

Collection Development Policy

The University Library’s written Collection Development Policy guides the selection of materials for the library collection. It reflects a commitment to student and faculty curricular and research needs in all formats. The Policy also defines the mission of the University Library’s Educational Materials Center, a special collection of curriculum materials, “to make readily available for study, evaluation, and
implementation, those educational materials of the highest quality produced for use with children from preschool through grade twelve.”

**University Library Services**

The priority of the Technology Education program is reflected in the University Library’s services, staff, and collaboration with faculty in the program. The program director works with the Educational Materials Center Librarian, Cory Mitchell, who has primary responsibility for the EMC, establishing quality materials for technology education students. The program director makes recommendations for the collection while the EMC Librarian communicates with vendors and publishers and offers ideas for purchases. Library instruction is provided to teacher education students. Included in instruction are: introduction to technology education textbooks, standards and curriculum guides, activity materials, Internet resources in technology education, searching the technology education literature (periodicals and books). Reference assistance regarding educational materials is provided by all Reference Staff; specialized or in-depth reference service is provided by the EMC Librarian.

2.4.2 **List any special resources used to meet program and/or student needs such as:** Academic Computing, Instructional Technology Services for curriculum materials development, ASPIRE, Research Center, Media Self-Instruction Lab, Academic Skills Center, etc. **List or describe any other resources which are needed to meet the program objectives with a brief statement as to how these would enhance or maintain the concentration quality.**

The Technology Education program director, freshman advisors, and School of Education personnel have the ability to direct students to a variety of resources that help students succeed. The resources utilized on campus are not limited to:

The School of Education ([http://www.uwstout.edu/soe/](http://www.uwstout.edu/soe/)) provides student and program resources. Assessment coordination, background checks, electronic portfolio support/maintenance, e-portfolio labs, Technology Education labs, websites and information relating to Praxis testing, forms, and benchmark interviews are some of the resources that contribute to students’ progression through the TE program. The SOE also offers a Praxis writing preparation course and supports a tutor for student needing help passing the Pre-Professional Skills test.

The Advisement Center ([http://www3.uwstout.edu/advisement/index.cfm](http://www3.uwstout.edu/advisement/index.cfm)) provides advisement for freshman, transfer and special students attending UW-Stout. Freshmen coming to UW-Stout are assigned a freshman advisor who guides students through their initial year at.


The Math Teaching and Learning Center ([http://mathtlc.uwstout.edu/index.html](http://mathtlc.uwstout.edu/index.html)), funded by the US Department of Education, offers math courses and tutorial help. Students needed help with courses or with the math portion of the Praxis exams can visit the center for assistance.

Career Services ([http://www.uwstout.edu/careers/](http://www.uwstout.edu/careers/)) personnel provide early professional development counseling relative to developing job skills and developing an educational resume. Students are encouraged to use career services as they progress through the TE program.
The Counseling Center (http://www3.uwstout.edu/counsel/index.cfm) contributes to students’ intellectual, emotional and relational health.

ASK 5000 provides computer support and repair support. There is face-to-face help as well as distance support. ASK 5000 provides online support tutorials for software applications (LYNDA) for various computer software applications and is used by students in the TE program.

The Stout Student Association (http://ssa.uwstout.edu/organizations.html) provides invaluable services for student organizations. TECA (Technology Education Collegiate Association) relies heavily on SSA resources for funding, printing, advisor resources and the like.

Research Services (http://www.uwstout.edu/rs/) is used to help programs, instructors, and students with research-related activities. Research Service’s has impacted the TE program through its involvement with Project Lead the Way and funding special research projects.

2.5 Assessment in the Major

2.5.1 The Assessment in the Major Report for 2008 (current), 2007 and 2006 may be found at http://www3.uwstout.edu/ provost/aitm.cfm.

3. Supply evidence of the quality of the graduates of the program.

3.1 Describe the demand for graduates and anticipated changes or trends in such positions/roles.

Current data suggests that there is a current need for technology education graduates that will remain in place in the upcoming decade. Wisconsin Department of Public Instruction’s 2007 Supply and Demand report http://dpi.wi.gov/tepdl/pdf/supdem07.pdf indicates that Technology Education is a critical shortage area (p. 53). The supply (pg.79) is well below average in Cooperative Education Service Agency area (CESA) 10 (Chippewa Falls) and 6 (Oshkosh). It is below average in CESAs 1 (Brookfield), 2 (Milton), 4 (West Salem), 8 (Gillet), and 9 (Tomahawk). It is average in CESAs 3 (Fennimore), 5 (Portage), 7 (Green Bay) and 11 (Turtle Lake). No vacancies were reported in CESA 12 (Ashland). At the time of the most current (2007) report there were 25 individuals on emergency licensure for technology education in the state of Wisconsin (p. 65). Thirty nine percent of the technology education teachers were fifty or older in Wisconsin’s 2007 Supply and Demand report (p. 28) which indicates that there will be jobs available due to retirements in the coming decade. Data from UW-Stout’s Budget Planning and Analysis office and annual summaries of undergraduate degrees (2007-2008 Summary Undergraduate Degrees http://www3.uwstout.edu/careers/upload/anrpt.pdf; http://www.uwstout.edu/careers/documents/anrpt.pdf; 2006-2007 Summary Undergraduate Degrees http://www.uwstout.edu/careers/anrpt.pdf; 2005-2006 Summary Undergraduate Degrees http://www.uwstout.edu/careers/testserver/documents/anrpt.pdf) indicates, as shown in Figure 1, that placement rates for graduates of the TE program are consistently high with 93 percent or better employment rates.
There are several factors that may impact these trends. Wisconsin Department of Public Instruction’s 2007 Supply and Demand report [http://dpi.wi.gov/tepdl/pdf/supdem07.pdf](http://dpi.wi.gov/tepdl/pdf/supdem07.pdf) indicates that the economy is impacting staff attrition and retirement rates. Of the schools responding to DPI’s 2007 survey, 21% indicated teachers were delaying retirement or transfers, 30% were reluctant to leave due to health care issues relative to retirement, 23 percent left education because of pay cuts and 27% of districts were laying off personnel or leaving positions vacant (pg. 47). The economic situation relative to education in Wisconsin has deteriorated since this report and may impact the number of TE teachers that are hired. The economic uncertainty may hurt program enrollment as tuition increases and existing K-12 TE programs are cut leading to a perception of dead-end career opportunities. The economic uncertainty may help enrollment as more individuals with technical backgrounds are laid off and seek career changes. The return of the non-traditional worker to education-related careers may offer an opportunity for TE program growth through partnerships with technical colleges and through the development of alternative delivery models.

When looking at ages of personnel by licensure code in DPI’s 2007 report (pp 28 & 34) one notes that the number of technology education teachers in Wisconsin decreased from 1376 teacher in 2002-2003 to 1269 teachers (a decrease of 107 positions (8%) over 4 years) in 2006-2007. While the overall placement rate of Stout’s TE graduates remains above 93% there is a trend showing that more TE graduates are finding work (approximately 20%) that is not related to their TE major. The increase in the number of TE graduates (approximately 9%) finding work outside the major from 2003 to 2008 corresponds to the 8% decrease of technology education jobs available in Wisconsin from 2002 to 2007.

UW-Stout’s Technology Education program is impacted by social, political and economic trends that exist at the state and national level. The TE program has undergone many changes in response to these trends. Enrollment in the TE program more than doubled from 1999 to 2000 (see Figure 2). This may have been in response to the Wisconsin Department of Public Instruction’s approval of the revised PI34 rules that restructured teacher education, educator licensure and professional development in...
2000 (dpi.wi.gov/Tepdl/ppt/pi34overview.ppt). With implementation of PI34 in 2004 the required professional portfolios, benchmarking systems, and assessment systems became part of entrance into and graduation from UW-Stout’s TE program. A program revision was approved for implementation in 2005 in response to PI34. While an enrollment decline has been associated with the implementation of PI34, the program is attracting students who are passing required Praxis examination, meeting academic achievement standards, and meeting PI34 and the School of Education assessment standards. The graduates of the program should contribute to improved teacher quality within the PK-12 education system. The enrollment numbers are currently within the range typical of that in the 1990s. The current enrollment numbers also speaks to feedback from the 2003-2004 PRC #3h which recommends to, “Consider reducing the number of students enrolled in the program to minimize advisement-related stress as well as competition for available core education/technology courses.” It should be noted that there is room for program growth and the program director is attempting to respond to the need for increased enrollment numbers by building personal connections, developing marketing strategies, and exploring distance education delivery models.

Other societal factors will continue to impact UW-Stout’s TE program. The No Child Left Behind Act of 2001 resulted in more math, science and English courses required within K-12 curriculum. This negatively impacts the number of students available to take TE elective courses corresponds to the declining number of TE positions that show up in Wisconsin DPI’s 2007 Supply and Demand report. It is expected that there will be an increased focus on career and technical education in the next five years.
which may increase opportunities for UW-Stout’s TE graduates. Career and Technical Education have become part of Wisconsin’s Comprehensive School Counseling Model (http://www.dpi.wi.gov/sspw/scguidemodel.html) which identifies individualized plans in a career pathway. The career pathways are structured into clusters (http://dpi.wi.gov/cte/careerclustershome.html) that provide foundational academic skills, cluster level employability skills, and career pathways. Carl Perkins funding (http://www.ccsso.org/content/pdfs/Perkins_CRS_Report.pdf) supplies the state of Wisconsin with $22,598,000 of basic funding and $2,107,000 in Tech Prep funds (May, 2005, p. CRS-11) to support career and technical education. The Kern Family foundation committed $10 million in 2009 to support Project Lead the Way (PLTW), a technology and engineering program in K-12 schools (http://dpi.wi.gov/dpi-connected/sea0811_2.html). Project Lead the Way’ Principles of Engineering (POE) course can be taken by high school students to fulfill a high school science credit which is recognized by UW-System. This POE course is taught by http://dpi.wi.gov/dpi-connected/sea0811_2.html technology education teachers and is part of the larger PLTW curriculum which receives funding from the state of Wisconsin (http://dpi.wi.gov/eis/pdf/dpi2009_26.pdf). The number of schools teaching PLTW courses has been increasing steadily over the past several years. Spending related to the US’s Recovery and Reinvestment Act Spending (http://www.recovery.gov/Pages/home.aspx) may also result in a renewed focus on career and technical education.

3.2 Interpret the data from the Institutional Research Office follow-up studies.

Data was collected from key instructors outside the program, from advisory committee members, from instructors within the program and from junior and senior students in the BS in Technology Education program. A summary of their responses follows.

Advisory Committee

Sixty-seven percent (10 of 15) of advisory committee members responded to the survey. Of these 70 percent felt that two meetings per year were adequate for the committee to meet with 90% indicating they felt they had contributed to the improvement of the program.

Figure 3, on the next page, summarizes the degree to which advisory council members felt informed about issues related to the TE program. The focus of the meetings during the past two years have revolved around program revisions and preparing for review by the Wisconsin Department of Public Instruction and by the National Council for the Accreditation of Teacher Education. Survey results reflect this as program content, program goals, and follow-up surveys of graduates were the major topics of discussion.

Advisory committee members indicated that attempting to keep up with the rapidly evolving field of Technology Education and the accompanying expectations of public schools, a broad content base, and the addition of a dual certification in Technology Education and Science Education were strengths of the program. The varied interests and talent of faculty and students within the TE program that have a connection to industry and the community were strengths. Program leadership was noted as a strength including program promotion, networking with partners/stakeholders, reinvigorating relationships with the field, and developing a program that includes more skills for pre-service candidates.

The advisory committee overwhelmingly indicated that teachers needed more technical skills related to teaching positions they would find themselves in when graduating. Specific areas related to career and technical training with hands-on labs and activities is needed within the program. Training related to safety/maintenance and program changes (faculty and program revisions) were also noted as weak areas.
Proactive promotion of the program, increasing connections between practicing teachers and recent graduates, and continued advisory committee involvement were suggestions for improvement. Adding maintenance courses and increasing hands-on classes that reflected current practices within the state of Wisconsin was also advised.

**Key Faculty From Outside the Program Area**

Survey results from key faculty outside of the program area were obtained from 80% (4 of 5) of the instructors identified by the program director. Instructors from the technical area of the program (communication, architecture, manufacturing, and construction courses) were identified from the STEM and Management Colleges to respond to the survey.

Figure 4, on the following page, shows that the program faculty have the necessary resources, labs, equipment, and contact with the program director to support the TE program and student learning.
The rigor of the curriculum, expectations of the program faculty, and the program director were noted as strengths of the program. Specific resources relative to delivering technical content was mentioned which supports feedback regarding the quality of labs and resources available for delivering technical content.

Faculty indicated that Technology Education students lack basic computing skills, Internet technology skills, and hands-on technical skills. This is consistent with feedback from the advisory committee and the need to include technical content within the program.

Suggestions for improvement focused on ensuring consistency, clarity and continuity across the program. It was noted that inconsistencies in content may be an issue when courses are not delivered by the same faculty member. In addition, the status for Project Lead the Way as it relates to Civil Engineering and Architecture is unclear. A funded position to coordinate PLTW activities was recommended.

Key Faculty Within the Program

In addition to the program director there are three faculty teaching TE program courses. Key faculty surveys were sent to each of these individuals with a response rate of 100%. Figure 5 on the following page summarizes the faculty responses.

The quality and relevance of the courses within the program and field experiences were indicated as a strengths of the program with course topics consistent with technology teacher education programs. The
quality of classroom and laboratory facilities, adequate supplies and equipment, cooperation with scheduling, library resources, communication with the program director and participation in making program decisions were among the top-rated categories.

![Key Faculty Survey](image)

Figure 5. Response Summary for Key Faculty Within the Program

Written feedback was largely directed toward improving upon the technical competency of students in the TE program. Feedback indicated that attention needs to be paid to the technical area of the program. Courses need to be up-to-date with course syllabi matching the course of record that has gone through the course approval process. It is suggested that technical courses focus on developing technical skill with less focus on curriculum development and student presentations within courses delivering technical content. There should be less focus on group work and more individual accountability relative to technical knowledge and skills.

A need to facilitate more clinical experiences in public schools and other educational settings was suggested. This corresponds to similar feedback from the TE advisory committee.

Numerous transitions have impacted the TE program over the past four years. It was noted that stability is needed within the program. Changes in the program include changes with clerical staff and corresponding support. Tied to the program changes is a need for adequate clerical support for all program faculty.
### Student Feedback

Student responses were obtained from 14 juniors and 28 seniors in the technology education program. The total number of respondents (42) represented a 49% response rate from the 85 students who received the survey. Student program feedback is shown in Table 1 on the following page.

Students agreed that the program included the development of their communication skills, the development of critical thinking and problem solving skills, the instructors being current, instructors meeting stated objectives, gaining a greater appreciation of diversity and developing a global perspective. Written comments helped support this as the most frequent comment related to program strengths related to positive experiences with courses and instructors. Students’ comments indicated that course instructors were knowledgeable in their field and that they had high expectations. One comment summarizes the strength of the program as, “The great amount of knowledge that every professor delivers. Each professor has a certain personality to them that makes coursework interesting and credible. Finally, the fact that you need to earn their respect through hard work and showing respect makes them all the more appropriate to be in a college setting, preparing those students that will be preparing society.” Students also commented that a broad course of study, courses that were relevant to current curriculum was a strength with comments such as, “The primary strength of the program is to encourage its students to evaluate what technology education SHOULD be, rather than simply using their own experiences as a guide.” and, “The Tech Ed Program is relevant to the educational needs of today's youth. There is a lot of potential for future educators to become fantastic, forward thinking instructors.”

Student responses indicated the lowest ratings (averages between 3 and 3.5) for advisors being accessible, being able to complete the program in a reasonable amount of time, being prepared for success, the quality of the program and choosing Stout’s TE program if they had to do it over. Students’ written responses relative to program weaknesses and improvements to be made focuses on three areas. First, students overwhelmingly indicated they did not feel prepared for their teaching career. They were interested in more technical content and more hands-on activities. They are interested in having more information related to finding and applying for jobs and advising within the program. There was a noted disconnect between what was being taught within Stout’s TE program and what they would be facing when they began their teaching career. The second area of concern relates to program changes. Students’ responses indicate that program revisions, faculty turnover, and the implementation of Project Lead the Way into the Program have impacted program quality, course quality and instruction. Finally, student feedback indicated a desire to have more field experiences incorporated into the program.

### Interpret the major results from your Specific Program Survey.

Key faculty within the program and students indicated a need for stability in the Technology Education program. This feedback is warranted. Junior and seniors have been in the program as two revisions were implemented, as Project Lead the Way was introduced to the program, as Science was added to the professional education component of the program and as the university took on the identity of a Polytechnic University. Two tenure-track faculty members teaching in the major left the program (one in 2005, one in 2007). One new tenure-track faculty member was hired as a replacement in the fall of 2006. A second tenure-track faculty supporting the TE program was hired on a part-time basis in the spring of 2008. He was subsequently hired full-time in the fall of 2008 and became a tenure-track faculty member in the fall of 2009. During the 2007-2008 school year, tenure-track faculty took the chair position for the School of Education or went on sabbatical. One full-time and one part-time faculty member remained to teach courses and address program issues in the TE program. In addition the leadership structures
<table>
<thead>
<tr>
<th>#</th>
<th>Questions</th>
<th>Strongly Disagree</th>
<th>Disagree</th>
<th>Somewhat Disagree</th>
<th>Somewhat Agree</th>
<th>Agree</th>
<th>Responses</th>
<th>Mean</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>The library resources and access to collections are adequate for my program of study.</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>8</td>
<td>23</td>
<td>34</td>
<td>4.50</td>
</tr>
<tr>
<td>2</td>
<td>My written communication skills have been enhanced through my coursework.</td>
<td>0</td>
<td>0</td>
<td>5</td>
<td>8</td>
<td>20</td>
<td>33</td>
<td>4.45</td>
</tr>
<tr>
<td>3</td>
<td>My critical thinking skills have been enhanced through my coursework.</td>
<td>2</td>
<td>2</td>
<td>2</td>
<td>11</td>
<td>16</td>
<td>33</td>
<td>4.12</td>
</tr>
<tr>
<td>4</td>
<td>My problem solving skills have been enhanced through my coursework.</td>
<td>1</td>
<td>2</td>
<td>4</td>
<td>8</td>
<td>17</td>
<td>32</td>
<td>4.19</td>
</tr>
<tr>
<td>5</td>
<td>The classroom facilities meet the needs of students in my program.</td>
<td>2</td>
<td>3</td>
<td>6</td>
<td>12</td>
<td>11</td>
<td>34</td>
<td>3.79</td>
</tr>
<tr>
<td>6</td>
<td>The laboratory equipment for my program is up-to-date.</td>
<td>3</td>
<td>3</td>
<td>4</td>
<td>15</td>
<td>15</td>
<td>40</td>
<td>3.90</td>
</tr>
<tr>
<td>7</td>
<td>My advisor is accessible on a routine basis.</td>
<td>7</td>
<td>6</td>
<td>5</td>
<td>8</td>
<td>10</td>
<td>36</td>
<td>3.22</td>
</tr>
<tr>
<td>8</td>
<td>Instructors in my program are accessible for help outside of regular class time.</td>
<td>0</td>
<td>2</td>
<td>1</td>
<td>13</td>
<td>18</td>
<td>34</td>
<td>4.38</td>
</tr>
<tr>
<td>9</td>
<td>Instructors in my program provide current and relevant information.</td>
<td>1</td>
<td>2</td>
<td>2</td>
<td>11</td>
<td>20</td>
<td>36</td>
<td>4.31</td>
</tr>
<tr>
<td>10</td>
<td>Instructors in my program achieve the stated objectives as presented in their course syllabi.</td>
<td>0</td>
<td>3</td>
<td>6</td>
<td>8</td>
<td>17</td>
<td>34</td>
<td>4.15</td>
</tr>
<tr>
<td>11</td>
<td>The evaluation procedures for my courses in my program appropriately measure my learning.</td>
<td>1</td>
<td>4</td>
<td>5</td>
<td>13</td>
<td>14</td>
<td>37</td>
<td>3.95</td>
</tr>
<tr>
<td>12</td>
<td>My program's objectives were made clear to me and are being met.</td>
<td>3</td>
<td>6</td>
<td>7</td>
<td>8</td>
<td>14</td>
<td>38</td>
<td>3.63</td>
</tr>
<tr>
<td>13</td>
<td>My program has few or no problems with unnecessary repetition or overlap of content. (If you disagree or strongly disagree with this question, please list the courses and/or content in which unnecessary repetition or overlap occurs in Question #Q9)</td>
<td>5</td>
<td>4</td>
<td>8</td>
<td>9</td>
<td>13</td>
<td>39</td>
<td>3.54</td>
</tr>
<tr>
<td>14</td>
<td>My program requirements can be completed in a reasonable time.</td>
<td>3</td>
<td>10</td>
<td>4</td>
<td>10</td>
<td>12</td>
<td>39</td>
<td>3.46</td>
</tr>
<tr>
<td>15</td>
<td>As I near the completion of my degree, I feel confident that my program has prepared me to be successful in my profession.</td>
<td>6</td>
<td>7</td>
<td>5</td>
<td>7</td>
<td>14</td>
<td>39</td>
<td>3.41</td>
</tr>
<tr>
<td>16</td>
<td>Overall, this is a quality program.</td>
<td>5</td>
<td>5</td>
<td>6</td>
<td>9</td>
<td>11</td>
<td>36</td>
<td>3.44</td>
</tr>
<tr>
<td>17</td>
<td>If I had to do it all over again, I would choose this program.</td>
<td>7</td>
<td>8</td>
<td>4</td>
<td>4</td>
<td>11</td>
<td>34</td>
<td>3.12</td>
</tr>
<tr>
<td>18</td>
<td>The coursework in ethnic studies that I have taken discourages racism and has given me a greater appreciation of ethnic diversity.</td>
<td>0</td>
<td>1</td>
<td>1</td>
<td>12</td>
<td>13</td>
<td>27</td>
<td>4.37</td>
</tr>
<tr>
<td>19</td>
<td>I have developed a global perspective.</td>
<td>0</td>
<td>1</td>
<td>1</td>
<td>12</td>
<td>17</td>
<td>31</td>
<td>4.45</td>
</tr>
</tbody>
</table>
overseeing UW-Stout’s Project Lead the Way initiative shifted three times in three years. All of these factors combined to create stress and instability within the TE program.

All groups responding the PRC surveys indicated that more technical experience is needed by pre-service candidates. Feedback indicates that there needs to be less group work and more individual accountability for technical skills among students. There is a strong feedback indicating safety and maintenance issues need to be addressed. A review of 1998, 2005, 2007, and 2009 program revisions shows that over time math and science requirements have been raised. A dual certification in Technology and Science Education was added as an option for student certification. There has been a steady increase in the credits in the professional sequence and a decrease in the number of technical courses available to students. Courses within the professional education area are directed less specifically toward Technology Education and more toward an integrated STEM (Science, Technology, Engineering and Math) approach. Evidence suggests that lack of technical skill development within the program may be impacting enrollment in the TE program. The University of Wisconsin-Platteville also provides licensures for TE 220 licensure. An evaluation of the University of Wisconsin – Platteville’s Technology Education program graduates in their Annual Employment Reports (http://www.uwplatt.edu/careercenter/reports/files/2008report.pdf, http://www.uwplatt.edu/careercenter/reports/files/2007report.pdf 2006-2007, http://www.uwplatt.edu/careercenter/reports/files/2006report.pdf, http://www.uwplatt.edu/careercenter/reports/files/2005report.pdf, http://www.uwplatt.edu/careercenter/reports/files/2004report.pdf) shows that Platteville’s skill-focused program (see Figure 6) has shown steady growth in the number of graduates from 2004 to 2008. Student survey results from the PRC and Assessment in the Major reports indicates that they are dissatisfied with the program. This is substantiated by retention and placement rate data for the TE program as supplied by UW-Stout’s Budget, Planning and Analysis office.

Figure 6. Number of UW-Platteville Technology Education Graduates
Table 2. Technology Education Retention and Placement Rate

<table>
<thead>
<tr>
<th>Technology Education</th>
<th>“Current” definition</th>
<th>Current</th>
<th>1 year ago</th>
<th>5 years ago</th>
<th>10 years ago</th>
</tr>
</thead>
<tbody>
<tr>
<td>Enrollment</td>
<td>F2009</td>
<td>141</td>
<td>147</td>
<td>311</td>
<td>360</td>
</tr>
<tr>
<td>Retention- in the same program</td>
<td>F2008</td>
<td>63.6%</td>
<td>65.2%</td>
<td>85.7%</td>
<td>82.4%</td>
</tr>
<tr>
<td>Retention- in any program</td>
<td>F2008</td>
<td>77.3%</td>
<td>82.6%</td>
<td>90.5%</td>
<td>84.3%</td>
</tr>
<tr>
<td>6 yr Graduation- in same program</td>
<td>F2003</td>
<td>57.1%</td>
<td>44.6%</td>
<td>60.8%</td>
<td>72.2%</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(24)</td>
<td>(25)</td>
<td>(31)</td>
<td>(13)</td>
</tr>
<tr>
<td>6 yr Graduation- in any program</td>
<td>F2003</td>
<td>71.4%</td>
<td>58.9%</td>
<td>64.7%</td>
<td>72.2%</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(30)</td>
<td>(33)</td>
<td>(33)</td>
<td>(13)</td>
</tr>
<tr>
<td>Number of Graduates</td>
<td>08-09</td>
<td>27</td>
<td>62</td>
<td>85</td>
<td>41</td>
</tr>
<tr>
<td>Placement rate- employed</td>
<td>07-08</td>
<td>100%</td>
<td>93%</td>
<td>100%</td>
<td>100%</td>
</tr>
<tr>
<td>Placement rate- employed in major</td>
<td>07-08</td>
<td>81%</td>
<td>80%</td>
<td>89%</td>
<td>97%</td>
</tr>
<tr>
<td>Average starting salary</td>
<td>07-08</td>
<td>$33,000</td>
<td>$33,000</td>
<td>$30,000</td>
<td>$28,000</td>
</tr>
<tr>
<td>Average ACT score</td>
<td>F2009</td>
<td>21.00</td>
<td>21.09</td>
<td>20.86</td>
<td></td>
</tr>
</tbody>
</table>

Connection to stakeholders is a critical issue for this program. Survey results indicate that interactions with the program director are an asset to the program. Continued involvement from advisory committee members and developing strategies to effectively communicate with practicing teachers were indicated. More field experiences earlier in the program require increasing placement opportunities for TE majors is indicated as a need. Positive interactions and taking opportunities with faculty from peer institutions/technical colleges, with peers supporting the Technology Education program at UW-Stout, with alumni and with current students will help strengthen the program. These interactions and better use of marketing strategies and updated communication strategies may help improve the perception of UW-Stout’s Technology Education program.

4. Supply evidence of continuous improvement efforts of the program.

4.1. Describe the strengths and unique features of your program that distinguish it from similar programs. What are the weaknesses of the program?

The TE program at UW-Stout has areas of strength. The TE program has a long history of supplying Technology Education teachers to the state and nation and is recognized as an institutional leader in the field. The program is currently providing leadership by implementing a program that prepares students for the ever-changing field of Technology Education. It is focusing on the future while acknowledging the traditions of the past. Traditional skill-building courses are in place as are the courses designed to address pre-engineering, design, and problem solving. A new dual-certification in Technology and Science Education was implemented in the fall of 2009. Project Lead the Way courses integrated into the TE program provides an opportunity to review and improve technical content being delivered within the TE program. The initiative also helps prepare students for diverse teaching situations they may find upon graduation. Faculty members are equipped to address this challenge. All faculty members within the Technology Education program have doctorate degrees and several are licensed to teach in K-12 settings. The degrees were awarded from different institutions in different states which facilitates diverse perspectives, experiences, and expertise to contribute to the program. Instructors from other colleges and the associated chairs and deans have willingly provided assistance in course and program changes. Facilities have recently been remodeled and include upgraded instructional facilities with a supporting lab.
There is a strong student organization (TECA) which is engaged in leadership, fellowship, and professional responsibilities. There are also strong connections between the Technology Education program and other programs, faculty, and staff at UW-Stout, with technical colleges and with teachers in the field. One example of this can be found as students and staff from the both the STEM college and the Technology Education program and the Marketing and Business Education program collaborate to bring events such as the Rube-Goldberg Machine Contest, Skills USA, and First Lego League to UW-Stout’s campus.

The past few years in the TE program have seen many changes. Course and program changes were made in response to grant funding and a focus on developing a STEM program. Until recently a mission and vision for the program was lacking. The focus of the program drifted and now needs to be revisited. The addition of more field experiences earlier in the program and attention to developing technical expertise needs to be considered. A plan needs to be developed to provide ongoing support for newly remodeled labs and classrooms. A plan to replace obsolete technology and equipment needs to be developed. A commitment to support Project Lead the Way and provide the necessary resources (project coordination, travel to state meetings, supporting a long-term plan for sustainability) on an ongoing basis is critical. Updating PLTW training pathways, coordinating effort and information between twelve teachers implementing PLTW-related courses, developing web and marketing information, coordinating lab and equipment needs, attending state advisory meetings, and so forth can be difficult without time or resources allocated to the project. Relationships and networks with supporting stakeholders need to be reestablished and reinforced. Currently this effort falls mainly on the program director and to supervisors of student teachers. It will be more effective if a model of building and reinforcing communication and support networks is attended to by all faculty members within the program. Duties relative to advisory council meetings, state leadership meetings, supervising TECA activities, organizing conferences, and the like are an opportunity build relationships and market the program that may be more effective as a collaborative effort. In conjunction with this support is needed to build and maintain these relationships. Adequate support for attendance at state meetings, Project Lead the Way meetings, advisory council meetings, marketing programs at events such as Skills USA/WTEA (Wisconsin Technology Education Association), and travel funds supporting the TECA advisor could be viewed as marketing expenses to help build the program. Some of these activities are currently funded and some are not. A proactive marketing strategy for the TE program needs to be developed. In conjunction with this it is imperative that TE staff have access to adequate clerical staff and marketing experts.

4.2. Submit evidence of program response to the concerns and recommendations in your previous program review.

After assuming responsibility for the BS in Technology Education program in the fall of 2007, the new program director reviewed past program assessments. The 2005-2006 PRC report indicated that the following objectives for the Technology Education program had been met:

1. Advising: The program director has demonstrated a strong commitment to this concern. The student surveys show a marked improvement in this area. The program director has provided students with an advising FAQ sheet, has distributed advising responsibilities across the faculty and has communicated with concerned parties.

   Additional Action:
The FAQ sheets remain part of the program. Advising responsibilities are distributed across the faculty. Program planning with accompanying program plan sheets and a 4-year sequence of

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courses is distributed in introductory level courses and is available online. In addition the program
director has held large-group advisement meetings during advisement day with a mandatory
attendance requirement. In conjunction with UW-Stout’s conversion to PeopleSoft all program
faculty should have access to student records to facilitate student advising.

2. Communication: The program director acknowledges that conflicts of opinion about priorities and
objectives are endemic in this field. That being said, the program director has held advisory board
meetings, solicited feedback from various stakeholders, and initiated dialogue regarding program
goals, curriculum choices, DPI requirements, and national trends.

Additional Action:
In order to make data-driven decisions regarding the BS in Technology Education program, the
current program director informed the decision making process using multiple methods. The
Assessment in the Major report provided annual feedback that was tracked over time. A new
advisory committee was formed consisting of current teachers, industry representatives, students,
technical college representatives and administrators. The group was formed to represent diverse
viewpoints including those who supported the TE program and those who were critical of UW-
Stout’s TE program. Feedback was obtained from students during advisement day and during
seminar days for student teachers. A concerted effort was made to establish ties with faculty
members of the STEM and Management colleges. The program director also became a member of
advisory boards for the technical college, two local school districts and the state teachers
association. The program director spoke with cooperating teachers about Stout’s program in
conjunction with student teacher observations. NCATE program standards and report forms for
Technology Education (http://www.ncate.org/institutions/programStandards.asp?ch=4) were
reviewed and a study comparing UW-Stout’s Technology Education program to with 18 other
universities offering Technology Education degrees was completed. Overall credits, general
education, professional education, and technology components were analyzed for the eighteen
institutions. Additional information from Wisconsin’s consultant for Technology and Engineering
Education provided data relative to high school career and technical programs and the number of
students enrolled in these programs. Paul Girolamo, an advisory committee member, provided
data on the growth of technical careers in Wisconsin and eastern Minnesota. In the fall of 2008 a
survey was sent out via the state list serve for technology education. Ninety-three respondents
answered questions providing a profile of current needs in the K-12 setting. Feedback from the
survey indicated the need for more technical, hands-on courses and additional time in a classroom
setting. The survey helped inform the program revision process by indicating what content areas
were most commonly taught in Wisconsin high schools. At the same time a conversation was
started between the University of Wisconsin extension, University of Wisconsin – Platteville,
University of Wisconsin – Stout, University of Wisconsin – Parkside, Gateway Technical College,
and a UW-System representative with the idea of developing an alternative delivery model for
certifying Technology Education teachers in the state of Wisconsin. Discussions from this
endeavor helped inform a program revision that included a Mechatronics course integrating
hydraulics, pneumatics, mechanics and electronics into one course. It provides content relative to
today’s K-12 schools and industries, and helps facilitate articulation agreements between technical
colleges and universities. As a result of these investigations and with the help of Engineering and
Technology chair a Mechatronics class is being added to the Technology Education program in the
fall of 2010. The Engineering and Technology department has also agreed to offer a maintenance
course that supports the Technology Education department. Finally, instructors in the Automotive
department at Chippewa Valley Technical College have indicated a willingness to offer a 1 to 4
credit automotive course specifically designed for UW-Stout’s Technology Education pre-service teachers and other practicing teachers who may wish to develop their automotive skills.

3. Hiring: Although clerical support has been obtained, recruiting qualified faculty and staff remains challenging, as a recent hire left the program for employment elsewhere. However, a search is ongoing for a new faculty member. If enrollments remain stable, the expected addition of a new faculty member in fall 2006 will be sufficient to program needs.

Additional Action:
The current program director was hired in the fall of 2006 and in the fall of 2009 a second tenure-track faculty member was hired to replace an individual who left the program in 2007. Stability in the program should be easier to attain with these additions. The current clerical support is not adequate to meet the current demands placed on program faculty members and the need to increase marketing efforts.

Relative comments from the 2003-2004 for PRC report include:

4. Address stakeholder concerns regarding the minimal rigor of the program, particularly as it relates to the need for core-skill lab competencies (equipment operation and maintenance, welding, fluid power, and wood skills, electronics, safety) and math/physics abilities.

Additional Action:
Both the math and science requirements have been raised since the 2003-2004 PRC review. PHYS 211 -Introduction to Physics and the lab PHYS 212 (or higher), BIO-111 Science, Society and the Environment, and Intro to College Math II (MATH 121) or higher is required within the program.

5. Continuously maintain open lines of communication with key internal instructors as well as those who are outside of the department. The program director should consider actively soliciting feedback on stakeholder concerns and respond to such concerns in a timely manner through public meetings and/or correspondence.

Additional Action:
The program director has scheduled meetings with the chair of the Engineering and Technology department. She has ongoing collaborative efforts with STEM faculty not limited to Project Lead the Way, First Lego League, Supermileage Vehicle, Rube Goldberg Machine, STEPS, and Skills-USA activities. Other efforts to communicate with various stakeholders have been indicated in previous sections. Feedback on PRC surveys indicates that communication with the program director is a strength of the program.

In addition to the items already listed, a lab modification proposal was passed in the fall of 2006 and finished in the fall of 2008. The lab supports the Project Lead the Way pre-service teacher training initiative at UW-Stout. It includes computers, supporting software, equipment and supplies that help develop students’ technical abilities in conjunction with teacher education courses. The lab also serves as an informal gathering place for TE students and supports the informal learning communities that develop as a result of student interactions. The lab is helping provides a connection between theory and practice and has seen a large increase in use since it was first opened.
During the spring of 2008 and the fall of 2009 the program director led the Department Area Workgroup (DAWG), consisting of Technology Education and Science Education faculty members, in a discussion that led to developing a mission and vision statement. The proposed mission and vision statement are:

Mission Statement:
The mission of the technology teacher education program at the university of Wisconsin-Stout is to prepare competent classroom practitioners who are technologically literate, pedagogically skilled, and professionally engaged.

Vision Statement:
Produce graduates who understand technology and use the resources available to them in public education settings.

The mission and vision statement will be utilized after the program committee provides feedback and approval. Development of a mission and vision will help the program stay focused and develop long-term goals.

4.3 In the next seven years, what are the major improvements or changes you plan to implement to improve program quality?

The program director intends to work proactively to achieve the following goals in response to feedback from Assessment in the Major and Program Review Committee data.

1) Investigate ways to add technical content back into the program. The program director will work with STEM and Management College personnel to explore course revisions, content overlap, program revisions and other viable options to make this happen. The program director will also work with the School of Education’s assessment coordinator to make sure the program follows a coherent plan that meets certification requirements in conjunction with the effort.

2) Facilitate more field experiences occurring earlier in the program. Partnerships with surrounding schools, developing a new field experience, and other options will be explored. The program director will work with the School of Education placement coordinator in this endeavor.

3) Continue efforts to bring an alternative licensure program which includes distance delivery to the UW-system and expand it beyond the state of Wisconsin if possible. This may be a viable option to serve non-traditional students while expanding the program and should have a positive impact on program enrollment.

4) Integrate Project Lead the Way into pre-service education with clear guidelines and criteria in place.

5) Continue to connect with program stakeholders including students, teachers in the field, peers at UW-Stout and the like. This may include developing opportunities to bring K-12 educators to UW-Stout, bring students to UW-Stout for competitive events or to use facilities related to Project Lead the Way, serving on advisory committees and so forth.

6) Lobby for a proactive plan that supports existing lab, support personnel, and student
organizations that are crucial to the smooth operation of the Technology Education program.

5. Attachments

5.1 Submit any other information or documentation that may be helpful to the Planning and Review Committee in reviewing the quality of the program including interpretation of data from Institutional Research and PRC data.

- BS Technology Education Revision is attached electronically as Final Report Technology Education Curriculum Incubation

5.2 Attachments to be included:
- Current assessment in the major is found at for 2006, 2007 and 2008 is found at http://www3.uwstout.edu/provost/aitm.cfm
- Current program advisory committee members for the BS in Technology Education are found at: http://www3.uwstout.edu/provost/progcommittees.cfm
- Other items requested by the consultant
Questions for Response by Concentration Coordinators
Of Concentrations under Review – If Appropriate

1. DESCRIPTION OF THE CONCENTRATION
Not Applicable

2. FACULTY/ACADEMIC STAFF EXPERTISE
Not Applicable

3. FACILITIES
Not Applicable

4. RESOURCES FOR THE CONCENTRATION
Not Applicable

5. SUPPLY EVIDENCE OF THE QUALITY OF THE GRADUATES OF THE CONCENTRATION
Not Applicable

6. IN THE NEXT SEVEN YEARS, WHAT ARE THE MAJOR IMPROVEMENTS OR CHANGES YOU PLAN TO IMPLEMENT TO IMPROVE CONCENTRATION QUALITY?
Not Applicable

7. SUBMIT ANY OTHER INFORMATION OR DOCUMENTATION WHICH MAY BE HELPFUL TO THE PLANNING AND REVIEW COMMITTEE IN REVIEWING THE QUALITY OF YOUR CONCENTRATION.
Not Applicable