

**Program Assessment Report**  
**2011-2012 Academic Year**

*Master of Science in  
Technology Management*



**Marshall University**  
**College of Information Technology and Engineering**  
**Division of Applied Science and Technology**  
**Technology Management Program**

## **I. Program's Mission**

*The Technology Management Program will provide a curriculum that encompasses the innovative nature of the field, offering learning experiences with real-world application for current and future managers of technology.*

The TM Program additionally supports the mission of the College of Information Technology and Engineering, "to be a recognized leader in practice-oriented teaching and applied research". Marshall University's mission statement includes commitment to providing innovative graduate education and actively facilitating learning through the preservation, discovery, synthesis, and dissemination of knowledge through use of all appropriate modes of delivery to promote student learning, retention, and academic success. It additionally commits to providing students the opportunity to undertake intensive graduate-level education in their chosen fields, giving them solid foundations for becoming competent professionals.

The Master of Science in Technology Management exemplifies the University's mission, as it provides practical, real-world-based education using faculty with acknowledged expertise to actively and innovatively facilitate learning through their knowledge and experience in their fields. Multiple delivery systems and up-to-date technological capabilities provide the platform to disseminate this knowledge to both local and remote students, while course projects and the comprehensive Capstone project provide the opportunity to apply cumulative knowledge to real-world applications.

Program Core Courses integrate technology, business, science, and engineering in a unique program that blends essential skills and knowledge, which are imperative to economic success in an increasingly complex technical economy. The Areas of Emphasis provide solid foundations for students to become competent professionals, as students select from a wide-range of opportunities for active learning in their chosen field. The Environmental emphasis trains leaders for government, industry, and non-profits in the new "green" economy toward which we strive. The Information Technology area prepares students to become managers well versed in up-to-date computer and application systems and communications essential for professional and organizational success. The Information Security area prepares students to address the ever-evident, ever-increasing risks to the security of worldwide threats to information systems. The Manufacturing area is well suited to train students and industry managers to successfully transition to knowledge-based decision-making. The Transportation Area of Emphasis directly supports the economic development efforts of the Rahall Transportation Institute. The Pharmacy Area of Emphasis (offered in conjunction with the University of Charleston PharmD degree and currently under discussion for the new MU PharmD degree) provides future pharmacists with the technology and management skills they need to secure positions in their technology-centric profession.

## **II. Program's Student Learning Outcomes**

The M.S. in Technology Management requires students to successfully complete the Program's Core courses, four courses selected from their selected Areas of Emphasis (Environmental, Information Technology, Information Security, Manufacturing, Transportation, or Pharmacy), and a Capstone Project. Area of Emphasis courses belong to other CITE Programs, therefore, their outcomes were not assessed for this report.

<b>Assessment of Student Learning Outcomes and Activities</b>				
<b>Student Learning Outcomes</b>	<b>Assessment Measures (Tools)</b>	<b>Standards / Benchmark</b>	<b>Results / Analysis</b>	<b>Actions Planned / Taken</b>
1. Develop and/or evaluate an organization's financial status and strategy	<p>TM610 – Management of Innovation and Technology requires students to develop a real-world business plan for an innovation they developed. Their Final presentation and report includes development of a financial strategy for their business.</p> <p>TM612 – Economic &amp; Financial Analysis assignments, Midterm Project presentation and written report, and the exam require students to analyze the financial status of Case Studies and real-world companies.</p> <p>TM620 – IT Planning assignments and the Final Project require students to evaluate financial and other planning strategies of four Case Study organizations and a real-world company.</p>	<p>Assignments, exams, and projects demonstrate quantifiable knowledge for this Learning Outcome.</p> <p>Students targeted to achieve an average of 3.5 on a 4.0 scale for both the Project Report and Project Presentation Rubrics.</p> <p>Presentation Rubrics traits:</p> <ul style="list-style-type: none"> <li>- Organization</li> <li>- Subject Knowledge</li> <li>- Graphics</li> <li>- Mechanics</li> <li>- Elocution</li> </ul> <p>Project Report Rubrics traits:</p> <ul style="list-style-type: none"> <li>- Organization</li> <li>- Mechanics</li> <li>- Research</li> <li>- References</li> </ul>	<p>TM610 and 620 data will be collected Fall 2011 semester. Rubrics were not provided by the adjunct for the Spring 2011 TM612 course. All will be collected for analysis beginning Fall 2011 for potential course improvement the next time each is taught.</p>	<p>Benchmark changed from 90% on the Rubrics to a 3.5 average across both presentation and written rubrics per program review recommendations.</p> <p>Rubrics continue to be refined.</p> <p>To date, rubrics were only used for grading. Moving forward, they will be analyzed.</p>

Student Learning Outcomes	Assessment Measures (Tools)	Standards / Benchmark	Results / Analysis	Actions Planned / Taken
<p>2. Ability to work successfully in a project team</p>	<p>TM620 – Technology Planning is a team-based class with multiple opportunities to assess a student's success working with a team through team member evaluations submitted by each team member.</p> <p>TM630 – Quality and Productivity Methods requires students to work in small teams to present a quality topic report to the class. Team members are each evaluated by their team.</p> <p>EM660 – Project Management students must demonstrate through written exercises and projects, a clear understanding of the fundamental principles and the importance of people and teamwork in technical projects and effectively working with people.</p>	<p>TM620 Case Study assignments and presentations, and the Final Project are team-based. Team members individually evaluate the contribution and participation of each team member (0-100%). A 90% rating averaged of the two scores is targeted. Each member receives an individual score of 0-100% of the overall assignment points.</p> <p>Students in TM630 are pre-assigned to a team and quality methodology. Each team researches and presents to the class verbally and in writing. At least a 90% team member evaluation score is targeted.</p> <p>EM660 students will average at a least 90% of the total assignment points.</p>	<p>Team members appear to be candid in their evaluation of individuals on their team. Individual team members appear to be motivated by this process, as participation and contribution points increase as the semester progresses. Students with low evaluations are individually coached on how to work in a team environment.</p> <p>EM660 was taught by Engineering faculty/adjuncts this year, so student grades/points are unknown.</p>	<p>Team member evaluations are tracked to assure each team member contributes to the evaluation process. Individual points for all members of teams who have not submitting all their evaluations are not distributed until all evaluations are received. This has been a great motivator to assure everyone completes the team member evaluation form.</p>

<p>3. Ability to communicate effectively through written reports and public speaking assignments</p>	<p>All TM Core courses require students to research and write reports, and to develop and execute formal presentations</p> <p>All Core courses require informal presentations by which students discuss articles reviewed, give project status reports, and complete homework assignments, etc.</p>	<p>In-class presentations and impromptu project status reports provide experience in front of an audience. Rubrics are used to grade formal presentations. A targeted average for Presentation rubrics points is 3.5 out of a possible 4 points on the matrix,</p>	<p>Possibly due to the amount of speaking assignments given in TM classes throughout the semester, students appear relatively comfortable when presenting final project presentations.</p> <p>It is unknown what impact, if any, the use of Wimba (virtual classroom) has on student presentation scores. Some students choose to present in-class; others present remotely.</p>	<p>Speaking assignments and rubric traits continue to be refined.</p>
<p>4. Weigh the cost/benefit of technology decisions</p>	<p>TM612 – Economic and Financial Analysis assignments and exams include cost/benefit financial analysis exercises.</p>	<p>TM612 assignments and exams require use of time value of money (cost/benefit). A 90% score is targeted.</p>	<p>This course was taught by an adjunct this year, therefore, individual assignment and project grades are unknown.</p>	<p>Data will be available for the Spring 2012 semester.</p>
<p>5. Research, develop and execute a Technology Management-related project and present the results verbally and in writing</p>	<p>TM699 – The Capstone Project written report and presentation require students to apply and demonstrate knowledge gained throughout their graduate program to a real-world project application and/or organization.</p> <p>All TM Core courses require students to research, develop, and execute a class project. These are presented through a written report and verbal presentation.</p>	<p>The Capstone Advisor monitors the Project Plan developed by the student. The plan identifies how the project will be initiated, planned, developed and executed. The written report and verbal defense presentation are evaluated by a committee consisting of a minimum of three graduate faculty members. 100% approval is required for course credit.</p>	<p>The Capstone advisor reviews, provides comments, and edits all draft submissions prior to the Final Report being distributed to the committee.</p>	<p>The TM699 syllabus continues to be revised.</p>

Student Learning Outcomes	Assessment Measures (Tools)	Standards / Benchmark	Results / Analysis	Actions Planned / Taken
6. Ability to write a comprehensive project proposal	TM699 – The Capstone Project requires a formally written project proposal. This proposal assists in assessing student writing and analytical skills prior to initiating the development of a Capstone Final Project Report	Advisor approval of a formal proposal, indicating graduate-level writing and analytical abilities, is a prerequisite for registering for TM699. 100% approval is required prior to registration.	Capstone Proposal Guidelines developed and provided to students preparing to initiate their Capstone Project. 100% compliance is required to enroll in TM699.	<p>The advisor is in process of obtaining Service Learning designation for TM699. This will require a change in the project proposals guidelines.</p> <p>Written project proposals are also being implemented for other TM course projects for additional proposal writing experience. A topic sentence is the current requirement.</p>
7. Develop a strategic plan for a real-world organization	<p>TM620 – Technology Planning student teams work with Case Studies then real-world firms to develop vision and mission statements, conduct SWOT and competitive profile analysis, develop matrices, and deliver a strategic plan per the methodology taught in class. Assignments include status reports, meeting notes, and final project reports and presentations.</p> <p>TM610 – Management of Innovation and Technology requires students to develop a strategic/business plan for their own start-up company based on one of their original innovations.</p>	<p>TM620 team assignments and the Final Project provide quantifiable measures for assessing the student's ability to analyze an organization for purposes of developing a strategic plan. Written strategic plans are required as individual homework and a team oral presentation provide feedback on analytical abilities prior to their final report to the client and the class.</p> <p>Rubrics scores of 90% are targeted.</p> <p>TM610 students develop and present their business plans to the class and write a final report, which is reviewed by the instructor. An average score of 3.5:4.0 on presentation rubrics is targeted.</p>	<p>TM620 - 100% of the students participate on a project team to develop and present a strategic plan for a real world organization. 100% of the companies are at least satisfied, if not very satisfied with the strategic plan developed by the students. Some students have been asked to continue working with the organization even after the course is complete.</p> <p>TM610 – 100% of the students earned 90% or higher on their business plan report and presentation.</p>	<p>Adding the Service Learning designation for TM620 is under consideration, as it appears to be a good fit.</p> <p>Plan to convert measurements to rubric traits vs. point percentages.</p>

- III. **Assessment Activities (you may refer to the chart):**  
See above
- III. **Overview of changes implemented in your program this past year based on results and planned action specified in last year's report.**  
Beginning to identify results in rubric traits vs. point percentages, where possible
- IV. **Specify any changes/modifications made to your program based specifically on data obtained during Assessment Day Activities.**  
No data obtained during Assessment Day
- V. **Assistance Needed with Assessment:**  
No assistance needed with assessment