

Program Assessment Report

2010-2011 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 quality 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) 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 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.

Assessment of Student Learning Outcomes and Activities				
Student Learning Outcomes	Assessment Measures (Tools)	Standards / Benchmark	Results / Analysis	Actions Planned / Taken
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 & Financial Analysis assignments, Midterm Project presentation and written report, and the exam require students to analyze the financial status of Case Study 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. A Project Report and Presentation Rubrics total of at least 90% is targeted</p>	<p>TM610 – 100% of the students earned at least 90% on their Business Plan Development Project</p> <p>TM612 – 100% of the students earned at least 90% total on their assignments and projects.</p> <p>TM620 – 100% of the earned at least 90% total on their assignments and projects</p>	<p>No action required. Will continue to investigate use of varied tools to further promote these learning outcomes</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 through team 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 Presentations and the Final Project are team-based. Team members individually evaluate the contribution and participation of each team member (0-100%). 90% is targeted. Each member receives an individual of 0-100% of the overall assignment points.</p> <p>Students in TM630 are assigned a team and quality methodology to research and present to the class. At least a 90% team evaluation score is targeted.</p> <p>EM660 students will average at a least 90% approval rating by fellow team members on how each student performed in a team environment working toward achieving project objectives</p>	<p>Team members appear to be candid in their evaluation of individuals on their team, and individual team members appear to be motivated by this process, as participation and contribution points appear to increase as the semester progresses.</p> <p>In TM620, 96% of the students earned 90% or higher in their evaluations by their team members.</p> <p>In TM630, 100% of the students earned 90% or higher in their team evaluations.</p> <p>In EM660, 100% of the students earned a 90% or higher evaluation by their team.</p>	<p>Team member evaluations are now tracked for both the team member being evaluated and the evaluator to assure each team member contributes to the evaluation process. The evaluator earns participation points for completing the evaluation for each team member.</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 to discuss articles read, give project status, and complete homework assignments, etc.</p>	<p>In-class presentations provide experience in front of an audience with audience and instructor evaluations. Presentation rubrics total of 90% is targeted</p>	<p>Results vary with the individual, however, significant improvement is apparent at students become more comfortable presenting to their peers</p>	<p>Rubrics continue to be refined.</p> <p>Will continue to promote communication throughout the TM Program.</p>
<p>4. Weigh the cost/benefit of technology decisions</p>	<p>TM612 – Economic and Financial Analysis assignments and exam are cost/benefit financial analysis exercises.</p>	<p>TM612 assignments and exam require use of time value of money (cost/benefit). A 90% score is targeted.</p>	<p>100% of the students earned at least 90% on assignments and exam.</p>	<p>No action required.</p>
<p>5. Research, develop and execute a Technology Management-related project and present the results orally and in writing</p>	<p>TM699 – The Capstone Project written and oral reports require students to apply and demonstrate knowledge gained throughout their graduate program to real-world applications and/or organizations.</p> <p>All TM Core courses require students to research, develop, and execute class projects.</p>	<p>The Capstone Advisor monitors the Project Plan developed by the student which identifies how the project will be developed and executed. The written report and oral defense presentation are evaluated by a committee consisting of a minimum of three graduate faculty members. 100% approval is required.</p>	<p>The Capstone advisor reviews, provides comments, and edits all draft submissions prior to the Final Report being distributed. A syllabus was first developed for this course in 2008.</p>	<p>Syllabus continues to be refined</p>

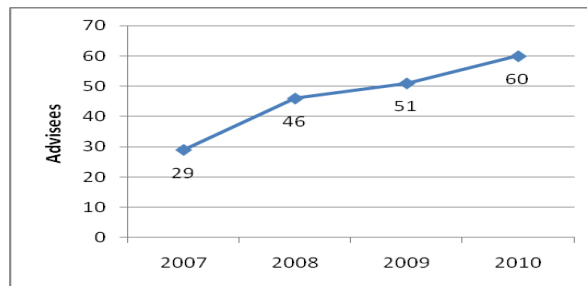
Student Learning Outcomes	Assessment Measures (Tools)	Standards / Benchmark	Results / Analysis	Actions Planned / Taken
6. Ability to write a comprehensive project proposal	TM699 – The Capstone Project requires a formally written project proposal for all Final Projects to assess student writing and analytical skills prior to development of a Capstone or course Final Project Report	Advisor approval of a formal proposal, indicating graduate-level writing and analytical abilities is a prerequisite for registering for TM699 – the Capstone Project. 100% approval is required.	Capstone Proposal Guidelines developed and are provided to students preparing to begin their Capstone Project. 100% compliance is required to enroll in TM699	No action required. Considering requiring a written project proposal for other course projects to provide additional proposal writing experience beyond development of a topic sentence as the current requirement.
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/mission statements, conduct SWOT and competitive analysis, develop matrices, and deliver a strategic plan per the methodology taught in class. The Midterm exam and graded assignments, to include project proposals, status reports, meeting notes, and presentations to the class and for their “client” provide measureable outcomes.</p> <p>TM610 – Management of Innovation and Technology requires students to develop a strategic/business plan for their own start-up company.</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. Well developed student case study plans are posted for other students to review. Rubrics scores of 90% are targeted.</p> <p>TM610 students develop and present their business plans to the class and write a final report that is reviewed by the instructor.</p>	<p>TM620 - 100% of the students developed a strategic plan for a real world organization. 100% of the companies were at least satisfied if not very satisfied with the strategic plan developed by the students.</p> <p>TM610 – 100% of the students earned 90% or higher on their business plan report and presentation</p>	No action required.

III. Assessment Activities (you may refer to the chart):

See above matrix

IV. Overview of changes implemented in your program this past year based on results and planned action specified in last year's report.

- a. Team member evaluations of each member's contribution and participation are now being tracked. Also, each team member participates in the process of evaluating other team members and earns points for doing so.
- b. TM699 syllabus was updated to provide more detail on report and presentation requirements. It continues to be refined each semester.
- c. The TM Program has more than doubled during the 3 years since the current Program Coordinator was hired. The advisee:advisor ratio grew from 29:1 Fall 2007 to 60:1 Fall 2010. The need for additional faculty has been a stated issue in each Program Assessment and the Program Review.



V. Specify any changes/modifications made to your program based specifically on data obtained during Assessment Day Activities.

N/A

VI. Assistance Needed with Assessment:

N/A