

Program Assessment Report

2008-2009 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: *State the mission of the program and specify how the program's mission supports the university's mission.*

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 specifically addresses graduate students in its commitment to provide students the opportunity to undertake intensive graduate-level education in their chosen fields, giving them solid foundations for becoming competent professionals.

Although the Technology Management (TM) Program does not have its own Mission Statement, the Program exemplifies the mission of the University. It additionally supports the College of Information Technology and Engineering mission "to be a recognized leader in practice-oriented teaching and applied research".

The Master of Science in Technology Management 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 the comprehensive Capstone project provides the opportunity to apply cumulative knowledge to real-world applications.

Program Core Courses integrate technology, business, science, and engineering into a unique program that blends essential skills and knowledge that are imperative to economic success in an increasingly complex technical economy. The five Areas of Emphasis provide solid foundations for students to become competent professionals, as they offer students a wide-range of opportunities for active learning in their chosen fields. 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 on up-to-date computer and application systems and communications essential for professional and organizational success. The Information Security area, the newest Area of Emphasis, 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 economical development efforts of the Rahall Transportation Institute.

II. Program's Student Learning Outcomes: The M.S. in Technology Management requires students to successfully complete the Program's seven Core courses, four Area of Emphasis courses selected from five Areas of Emphasis (Environmental, Information Technology, Information Security, Manufacturing or Transportation), and a Capstone Project. This assessment focuses on the Program's Core courses and Capstone Project. Area of Emphasis courses belong to other CITE Programs, and their assessments were not compiled for this Report.

| Assessment of Student Learning Outcomes and Activities | | | | |
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| 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 Final 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 six 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 – 96% of the students earned at least 90% total on their assignments and projects</p> <p>TM620 – 100% of the students completing the course earned at least 90% total on their assignments and projects</p> | <p>Spreadsheets developed and maintained to track assessment results.</p> <p>Project Report Rubrics implemented. Rubrics will continue to be refined.</p> |

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| <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. Teams 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 EM660, 100% of the students earned a 90% or higher evaluation by their team, with 97% being the average</p> | <p>Although team member evaluations contribute to course grades, currently EM660 is the only course where this is tracked for assessment reporting. This practice will begin in the other TM Core courses Spring '10.</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>Presentation Rubrics were implemented Spring 2008 and Report Rubrics implemented Fall 2009. These continue to be refined each semester. Grades are computed through instructor and student evaluations of presentations, however, tracking evaluations for assessment data needs to be done.</p> |

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| 4. Weigh the cost/benefit of technology decisions | TM612 – Economic and Financial Analysis assignments and Exam 2 are cost/benefit financial analysis exercises | TM612 assignments and Exam 2 require use of time value of money (cost/benefit). A 90% score is targeted | 87% of the students earned at least 90% on Exam 2. | No action required |
| 5. Research, develop and execute a Technology Management-related project and present the results orally and in writing | <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> | 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. | 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 Spring 2008. It continues to be refined. | No action required |
| 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 were developed and are provided to students preparing to begin their Capstone Project. 100% compliance is required to enroll in TM699 | No action required. |

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| <p>7. Develop a strategic plan for a real-world organization</p> | <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> | <p>No action required</p> |
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III. Assessment Activities:

See above Assessment of Student Learning Outcomes and Activities Matrix

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

Numerous changes occurred since the last Assessment Report (2007):

- A full-time Program Coordinator was hired in December 2007
- The Program piloted Wimba, an online virtual learning environment application, and implemented it as an attendance option in all TM-designed courses. This technology aided student retention and began enhancing student recruitment
- Presentation and written report rubrics were developed and implemented for all TM-designated courses. These continue to be refined.

Updates to the 2007 Assessment Report Results and Plans for the Current Year sections include:

2007 – A new Area of Emphasis, Pharmacy, was approved as part of the effort with the UC School of Pharmacy. The cooperative schedule with University of Charleston's School of Pharmacy will be finalized.

2009 – The AoE was implemented in 2008. Two students are currently enrolled in the UC PharmD / MU TM program

2007 – Many of the TM courses are video linked between Huntington and South Charleston. The plan to test an alternative delivery method, using Breeze software, to have one class that is available live on the Internet, resulted in our broadcasting one course in spring of 2006.

2009 – All TM-designated Core courses are offered via Wimba, an Internet-based virtual classroom, with students in Arizona, Massachusetts, South Carolina, Beckley, Clarksburg... and Kuwait! The Polycom video-link is no longer required between campuses and the instructor does not need to travel to teach.

2007 – The Health Care Technology Area of Emphasis will be analyzed and possibly planned.

2009 – The Health Informatics Area of Emphasis was developed and proposed, however, it was rejected by Academic Affairs.

2007 – Now that North Central has accredited the college [BVBB], we should be permitted to explore the possibility of offering Technology Management in India.

2009 – Between sabbatical leave and retirement, meeting with our MU contact has been on hold. The TM Program Coordinator and CITE Associate Dean will meet with Dr. Akkihal to further explore potential opportunities in India.

2007 – The courses which comprise the TM program need to be reviewed. The TM program began at Marshall in 1996 and a thorough review is due, especially with the constant changes in Technology.

2009 – All TM-designated Core courses were re-developed, as previously course materials were unavailable to the new Program Coordinator

2007 – We will design and implement an exit interview to be held with all TM students the semester they plan to graduate.

2009 – Exit interviews were developed and implemented Spring 2008

2007 – The Technology Management Professional Certificate also needs to be reviewed; possibly decreasing the current required 24 credit hours. Most professional certificates are 12 to 18 credit hours.

2009 – The TM certificate was reviewed and eliminated.

2007 – There is continued interest in offering the Technology Management degree in Beckley, WV and in Parkersburg, WV. We need to decide which type of technology we are going to pursue in the future: video-link with equipped classrooms or pursue classes that are live on the Internet. Discussions regarding technology strategy will be held with interested parties.

2009 – Implementing Wimba solved the issue of offering the TM degree in multiple locations.

2007 – There is currently one faculty member to advise the 42 majors in TM. An additional faculty member is needed to help advise, and to increase the robustness of the courses.

2009 – Program majors increased by 10% and there is still only one faculty member to advise and “increase the robustness of the courses”.

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

N/A

V. Assistance Needed with Assessment: What assistance can the Office of Assessment give you to help improve your assessment program?

A GA position to assist with assessing, developing, and implementing Program improvements would be of great benefit.