

Program Assessment Report

2011-2012 Academic Year

Master of Science in Engineering



Marshall University
College of Information Technology and Engineering
Division of Applied Science and Technology
Division of Engineering

I. Program's Mission

The mission of the Master of Science in Engineering (M.S.E.) degree program, developed in accordance with standards adopted by the Accreditation Board for Engineering and Technology, is *to provide multi-disciplinary, graduate level engineering education appropriate for working professionals and others who do not have the option of full-time programs in a traditional university setting.*

Marshall's College of Information Technology and Engineering (CITE) will continue to provide academic instruction and service to provide life-long learning and career enhancement opportunities to its students in the business, industrial and government communities and to enhance the economic development of the region. The M.S.E. degree program is based in the Charleston-Huntington area, but is offered at other sites as the need arises. Course content and scheduling are designed to serve the needs of a student population that consists primarily of fully employed professionals, and has a slowly growing number of full-time students.

The M.S.E. degree program is a multi-disciplinary engineering program designed to meet the specific needs of engineers employed in industry, government, and consulting firms in the region. The program is housed within CITE's Engineering and Computer Science Division, and offers a central core curriculum with opportunities for concentrated study in selected areas of emphasis. Areas of emphasis currently available include Engineering Management, Environmental Engineering, and Transportation and Infrastructure Engineering.

The M.S.E. degree supports the university mission statement in that it provides a multi-campus affordable, high quality graduate education for the state and region using all appropriate modes of delivery and promotes economic development through research, collaboration, and technological innovations needed for our region.

II. Program's Student Learning Outcomes

Based on guidance from the Marshall University Director of Assessment, we have chosen to focus this annual report on approximately one third of the student learning outcomes for the M.S. in Engineering degree program. For the 2009 academic year, we looked only at the learning outcomes for the Environmental Engineering area of emphasis within the M.S. in Engineering. In 2010, the Engineering Management area of emphasis was assessed. We have not yet completed assessment of the learning outcomes for the Transportation and Infrastructure Engineering area of emphasis, due to the very few students in that area—there are only two students currently in that area, and they will both graduate this year.

The learning outcomes, assessment measures, benchmarks, results, and analysis and actions taken for the Transportation and Infrastructure Engineering area of emphasis are below. As shown, for the most part, our assessment procedures indicate that we are achieving our outcomes, but the development of competent and concise methods of measuring this success is an ongoing process.

Transportation and Infrastructure Engineering Area of Emphasis

Assessment of Student Learning Outcomes and Activities				
Student Learning Outcomes	Assessment Measures (Tools)	Standards / Benchmark	Results / Analysis	Actions Planned / Taken
1. The student will demonstrate competence in planning technical projects through application of project management principles and tools.	1.A. Final team project in EM 660 (Project Management)	1.A. The students will achieve a mean score (a combined individual and team score) on the final team project report of at least 90%	1.A. All students met this standard	1.A. We will continue to make final team project expectations clear and strive to insure the students have adequate feedback on their progress.
	1.B. The student will plan and execute a comprehensive project	1.B. Each student will demonstrate comprehensive project planning effectiveness by passing the TE 699 Comprehensive Project course.	1.B. All M.S.E. graduating students who completed their projects achieved this level of performance.	1.B. Continue to assess how we can continually improve the TE 699 Comprehensive Project experience for the student.
2. The student will demonstrate through written exercises and through team projects a clear understanding of the fundamental principles of the importance of people and teamwork in technical projects and effectively working with people in engineering situations.	2.A. Five written essay assignments in EM 660 (Project Management) that deal with interactions with people while working on projects	2.A. Students will average at least 90% on the five application-oriented people-focused essay assignments.	1.A. All students met this standard	2.A. Continue to work on helping the students to have assignments that require them to apply the principles of working with people in technical situations.
	2.B. Through team member evaluations of each other on the final team project in EM 660	2.B. Students will average at least 90% approval rating by fellow team members on how each student performed in a team environment working toward achieving project objectives	2.B. All students met this standard	2.B. Continue to use the techniques, methods, and principles we are using for this very important quality for success.

Student Learning Outcomes	Assessment Measures (Tools)	Standards / Benchmark	Results / Analysis	Actions Planned / Taken
3. The student will demonstrate the ability to communicate effectively, through written assignments and through public speaking presentations.	3. Written and orally presented Comprehensive Project Report for TE 699 (Comprehensive Project).	3. Students will receive a passing grade on the written and orally presented Comprehensive Project Report for TE 699.	3. All students met this standard	3. This outcome is somewhat subjective in nature. We will look into what possibilities there might be to make this outcome evaluation more objective through rubric development.
4. The student will apply statistical analysis concepts appropriately	4.A. Assignments in courses which require statistical analysis 4.B. When needed in the TE 699 course (Comprehensive Project)	4.A. Students should demonstrate appropriate use of applied statistics in coursework 4.B. Use ENGR 610 material appropriately as needed	4.A. Subjectively, the students do this in their engineering courses. Objectively they do it in ENGR 610 assignments. 4.B. Subjectively, the students do this. Objectively they do it to pass TE699, as needed.	4.A. Continue to observe and monitor the use of correct applied statistics concepts, tools, and principles in engineering coursework 4.B. Continue to observe and monitor and look for areas in which student learning needs to be better.

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. 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