

FORENSIC SCIENCE
2008-2009
Annual Report

The purpose of this annual report is to document the Forensic Science Program's progress in assessing its student learning outcomes based an assessment plan. The objective is to determine program effectiveness, not to evaluate individual students or individual faculty.

I. Program's Mission:

1. The MU Forensic Science Program will provide student services and resources to promote student learning, retention, academic, and professional success.
2. The MU Forensic Science Program will document high academic standards as dictated by continued accreditation at a national level through the Forensic Science Education Program Commission (FEPAC) of the American Academy of Forensic Sciences (AAFS). www.aafs.org
3. The MU Forensic Science Program will provide faculty for classroom and field instruction who are competent and professionally active in their fields and in adequate number to fulfill the program's mission statement.
4. The MU Forensic Science Program will encourage, and support, faculty development.
5. The MU Forensic Science Program will provide core and specialty courses designed to provide students with graduate-level competencies in basic and forensic science that reflect core objectives designed to prepare students for careers in modern forensic science laboratories or other roles in a wide-range of investigative capacities and services.
6. The MU Forensic Science Program will maintain strong working relationships with the forensic science profession, accrediting agencies, and practitioners in the field to ensure that its curriculum reflects current, real-world knowledge, skills, abilities and behaviors desirous of forensic science graduates entering the field.
7. MU Forensic Science Program will provide a high-quality graduate education designed to strategically place graduates in a position to compete successfully in the marketplace and to advance their careers in the forensic sciences and related fields.
8. The MU Forensic Science Program will instill, and model, the importance of life-long learning, career and professional development, personal and professional ethics, and the importance of contributing to the forensic science body of knowledge.
9. The MU Forensic Science Program will provide state-of-the art laboratory experiences and internships that will emphasize the importance of creative thinking, research, research integrity, and quality systems.
10. The MU Forensic Science Program will provide a curriculum that supports, and encourages, students to demonstrate their professional competencies through national certification.
11. The MU Forensic Science Program will encourage its students, staff, and

faculty to participate in community services while recognizing the importance of educating the public about the forensic sciences as well as fostering the development of outreach programs.

12. The MU Forensic Science Program will continue to improve instruction through use of innovative teaching methods.
13. The MU Forensic Science Program will actively engage and mentor students in scholarly and creative endeavors.

II. Program's Student Learning Outcomes (you may refer to the chart): List several specific, measurable student learning outcomes. These should be statements describing what competencies students must have, i.e. what students will be able to do, as they progress through and complete your program. We encourage an in-depth assessment of one-fourth of your outcomes each year, with all major outcomes being assessed in a four-year cycle.

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

- A. **Assessment Measures (Tools)** – The primary assessment tools utilized by the Forensic Science Program include a) the Forensic Science Assessment Test (FSAT) sponsored by the American Board of Criminalistics (http://www.criminalistics.com/cert_ovw.cfm) (Chart items A-I) and the International Association of Identification (<http://www.theiai.org/certifications/>) (Chart item J) , b) internship assessment rubric designed to assess learning outcomes in authentic (real world) work settings including rubrics designed to assess learning outcomes associated with the internship experience itself as well as well as seminar, poster, professional meeting presentation rubrics, and a research paper rubric (Chart item K), c) in-house comprehensive examination that requires a passing score to graduate (Chart item L), and graduate assistantship rubrics that assess student work ethic, ethical practice, and competency to learn new tasks and perform tasks as assigned (Chart item M).
- B. **Benchmarks** – a) The FSAT examination covers eight areas of forensic science whereby the program and individual test-taker receives a ranking among all test-takers and universities, respectively. As a benchmark, the program strives to be in the top 25% of universities participating and sets a benchmark for students to perform in the top 50 test-takers (Chart items A-I). The IAI Crime Scene Investigation examination is pass or fail so that a passing benchmark is observed (Chart item J); b) Internship in a working crime laboratory or a forensic research laboratory is required of all students. Rubrics are utilized to assess learning outcomes for internship performance (KSA Rubric, 1-5 points per 35 items with ≥ 4 as the individual item benchmark), seminar (1-4 points per 20 items with ≥ 3 as the individual item benchmark), MU Research Day poster presentation (1-5 points per 18 items with ≥ 4 as the individual item benchmark), professional meeting presentations (1-5 points per 18 items with ≥ 4 as the individual item benchmark), and a research paper (1-5 points per 20 items with >4 as the individual item benchmark); c) The MUFSP in-house comprehensive examination covers seven core components of the core curriculum. This is an all-day examination whereby

students are must achieve an 80% or better in at least 6 areas, no less than 70% in one areas with an overall grade of 80% or better to graduate; d) Assessment of work ethic, ethical practice, competency to learn new techniques, and to perform tasks as assigned is an important component of our graduate assistantship program using the KSA rubric, 1-5 points per 35 items with ≥ 4 as the individual item benchmark (Chart M).

- C. **Results/Analysis** – The Forensic Science Program underwent FEPAC reaccreditation review in fall 2009 with success. Results of their findings will be reflected in the 2009-10 Annual Review and are not reflected in 2008-09 Chart of Student/Program Outcomes. Students will continue to be encouraged to prepare for and sit for national certification exams designed for students enrolled in forensic science program such as the FSAT & IAI exams. Results of these exams will be continually reviewed by the FS faculty committee and improvements proposed and implemented. FSAT results ranked the MUFS Program #1 among 9 universities who participated. While not all students met the benchmark in all 8 areas of the examination, their combined results ranked all but 1 subsection as #1 or #2 among all test-takers and universities. All MUFSP students taking the IAI examination passed this examination. The IAI examination provides information to the test-taker but not to the program so no statistics are available regarding their level of performance or how they performed compared to all test-takers. All students achieved an overall grade of A or B on the internship, seminar, poster, and professional meeting rubrics as well as the research paper rubric. Faculty/supervisors are encouraged to provide a formative assessment as well as the required summative assessment for each allowing the student to learn from process and make improvements. Each student is evaluated by a team of reviewers that include the MU faculty topic advisor, the MU course director, and the external internship supervisor(s).
- D. **Analysis/Planned Action** – Examination results, e.g. MU Comprehensive examination, FSAT, and IAI, will be reviewed as results are available to facilitate changes to the curriculum or course content as necessary. Faculty and supervisors will be encouraged to provide students with formative rubric-based feedback so the student is better aware of faculty/supervisor expectations and to facilitate learning.
- IV. **Overview of changes implemented in your program this past year based on results and planned action specified in last year’s report.** The KSA Assessment rubric was instituted for graduate assistants during 2008-2009. One added-value of this was to better define GA positions as “Projects Completed in Authentic (real world) situations” as they are often counted as work experience when graduates apply for state and federal jobs. We are in a much better position this year, and for the future, to collect data based on the guidance provided by our participation in the Office of Assessment process. The results will continue to provide reliable information for making program improvements.

- V. Specify any changes/modifications made to your program based specifically on data obtained during Assessment Day Activities.** We did not participate in the Assessment Day Activities in 2008-09 but look forward to participating this year. If possible, we would like to propose our Comprehensive Examination date, April 2, be observed as our Assessment Day for second-year students. We are in the planning stages of an activity designed specifically for faculty and first-year students.
- VI. Assistance Needed with Assessment:** What assistance can the Office of Assessment give you to help improve your assessment program? Upon review of our submission, we would appreciate any feedback the Office of Assessment may provide. We would like to schedule time with our faculty to meet with an Office of Assessment representative to assist us in compiling and interpretation of data.

Marshall University
Assessment of Program's Student Learning Outcomes for the Forensic Science Program
[2008-2009]

Not every student learning outcome must be assessed every year. However, it is expected that at least one-fourth of the outcomes will be assessed each year, allowing for assessment of all outcomes within a four-year cycle. It also is important to use more than one assessment measure for each outcome.

Program's Student Learning Outcomes	Year evaluated	Assessment Measures (Tools)	Benchmarks	Results	Analysis/ Planned Actions
A. Knowledge of Core Forensic Science Specialty Areas	2009; Class of 2009	Summative: Performance on the national Forensic Science Assessment Test (FSAT)	Program performs in top 25% of universities participating	MU Forensic Science Program ranked #1 among 9 universities participating in the FSAT; individual students ranked as follows: 2-24 overall of 123 students.	Program achieved benchmark. Will continue to participate in this national examination designed for students currently enrolled in forensic science programs.
B. Knowledge in Forensic Biology	2009; Class of 2009	FSAT subspecialty section	Rank 50 or lower.	All ranked 50 or lower. Overall, ranked MUFS #7 among 9 universities.	Fair performance. MUFS is highly specialized in this area beyond what is covered on the FSAT. Will perform a correlation study of area of emphasis and score. Subcommittee developed to review results and to develop a study guide of undergraduate- level basic science concepts as a review. Will continue to monitor.

Program's Student Learning Outcomes	Year evaluated	Assessment Measures (Tools)	Benchmarks	Results	Analysis/ Planned Actions
C. Knowledge of Controlled Substances	2009; Class of 2009	FSAT subspecialty section	Rank 50 or lower.	All but 2 ranked 50 or lower. Overall, ranked MUFS #2 among 9 universities.	Good performance. Continue monitoring over time. Our program does not require all students to complete FSC 624 Drug Analysis. Do a correlation study of scores as they related to taking this course.
D. Knowledge of Trace Analysis	2009; Class of 2009	FSAT subspecialty section	Rank 50 or lower.	All but 2 ranked 50 or lower. Overall, ranked #1 among 9 universities.	Good performance. Continue monitoring over time. Our program does not require all students to take FSC 628 Chemical Trace Analysis. Perform a correlation study of scores as they relate to taking this course.
E. Knowledge of Toxicology	2009; Class of 2009	FSAT subspecialty section	Rank 50 or lower.	All but 2 ranked 50 or lower. Overall, ranked MUFS #1 among 9 universities.	Good performance. Continue monitoring over time. Our program does not require all students to take FSC 608 Toxicology. Perform a correlation study of scores as they relate to taking this course.
F. Knowledge of Latent Prints	2009; Class of 2009	FSAT subspecialty section	Rank 50 or lower.	All ranked in first place. Ranked MUFS #1 among 9 universities.	Excellent performance. Continue monitoring over time.

Program's Student Learning Outcomes	Year evaluated	Assessment Measures (Tools)	Benchmarks	Results	Analysis/ Planned Actions
G. Knowledge of Questioned Documents	2009; Class of 2009	FSAT subspecialty section	Rank 50 or lower.	All but one ranked 50 or lower. Ranked MUFS #1 among 9 universities.	Good performance. Continue monitoring over time.
H. Knowledge of Fire Debris	2009; Class of 2009	FSAT subspecialty section	Rank 50 or lower.	All ranked 50 or lower. Ranked MUFS #1 among 9 universities.	Excellent performance. Continue monitoring over time.
I. Knowledge of Firearms & Toolmarks	2009; Class of 2009	FSAT subspecialty section	Rank 50 or lower.	All ranked 50 or lower. Ranked MUFS #2 among 9 universities.	Good performance. Continue monitoring over time.
J. Knowledge of Crime Scene Investigation	2009; Class of 2009	IAI Knowledge Test for CSI	Pass	All those taking the exam passed.	Excellent performance. Continue monitoring over time. Encourage students to take this examination.
K. Projects completed in authentic (real world) situations	2008; Class of 2009	Internship Knowledge, Skills, & Abilities (KSA) Assessment (Rubric); Research Paper rubric; Seminar rubric; Poster rubric	90% receive 4 points or higher on a 1-5 point rubric scale x 26-items; B or better overall.	Internship: Among 260 items evaluated for the Class of 2009, there were 10 incidences of a score of 3. All others were 4's and 5's. All students received an overall score equivalent to a B or better; Research Paper: Both formative (non-graded) and summative (graded) with one C and remainder @ \geq B.	Excellent to good performance. Remediate any rating of < 4 with student.
L. MUFS Assessment of Comprehensive Knowledge	2009; Class of 2009	MUFS Comprehensive Exam	\geq 80% or better in 6 sections with 1 or 0 at \geq 70%	All but one met the criteria.	One student was required to repeat the examination in microscopy and chemistry.

Program's Student Learning Outcomes	Year evaluated	Assessment Measures (Tools)	Benchmarks	Results	Analysis/ Planned Actions
M. Work ethic, ethical practice, & competency to learn new skills & perform work-related tasks as assigned.	2009: Class of 2009	KSA rubric	≥4 points on a 26-item KSA rubric	All performed at the benchmark level.	Ask supervisors to document an remediation that occurs in the future on scores of <4.