Mission / Purpose
The Bachelor of Science in Forensic Science is designed to equip students with the theoretical, practical and fundamental tools necessary for employment in the many disciplines of Forensic Science. The nature of the program is designed for students to become knowledgeable in the forensic areas of DNA, toxicology, crime scene investigation, latent fingerprint identification, and drug identification.

Student Learning Outcomes/Objectives, with Any Associations and Related Measures, Targets, Findings, and Action Plans

SLO 1: Historical Development, structure, and services
Students completing the program will understand the historical development, structure and services provided by Forensic Scientists as their role applies to the various justice and law enforcement systems.

Related Measures:

M 3: Student Survey
A survey will be administered to all students in order to measure perceived knowledge from their college experience. The survey will request perceptions regarding the program’s success at instilling a fundamental understanding of the basic scientific principles of forensic science, its advantages, limitations, and logical and technical expertise related to laboratory operations. This survey will be administered in the senior capstone course FSC 435.

Source of Evidence: Capstone course assignments measuring mastery

Target:
80% of the students will rate the experience as satisfactory (defined as 3 or higher on a scale from 1-5).

Findings (2013-2014) - Target: Met
Fall 2013-14: Fourteen students were enrolled in FSC 435 course for Fall 2013 semester. Of the fourteen students, thirteen students took the survey. All the 13 students (13/13; 100%) rated their experience as satisfactory or better regarding their perceived knowledge and college experience (3 or higher on a five point scale).

Spring 2013-14: There were 21 students participated in the survey in the FSC 435 class. Twenty students out of 21 who took the survey, (20/21; 95%) rated their experience as satisfactory at the program level as well as at the university level (3 or higher on a five point scale). 95% (20/21) of the students have indicated that they have comprehensive understanding of the basic scientific principles of forensic science, and technical expertise related to laboratory operations.

M 6: Oral Presentations
Each student is required to make two oral presentations in the senior capstone course FSC 435 (Policies and procedures). Students may choose topics related to laboratory test procedures, quality control methods, implementation of policies, instrumentation etc. The presentations are evaluated based on presentation skills such as clarity, eye contact with audience, use of language, scientific terminologies and knowledge. All the presentations must include a historical portion of the development of forensic science and/or the structure of a forensic laboratory and the types of services provided to law enforcement agencies and the public.

Source of Evidence: Presentation, either individual or group
Target:
75% of the students will be expected to score 80% or better on both oral presentations in the FSC 435 course. The presentations must include materials covering one of the following: 1. historical development. 2. structure of forensic science departments and 3. the services provided by forensic scientists.

Findings (2013-2014) - Target: Met
Fall 2013-14: There were 14 students enrolled in FSC 435 capstone course for Fall 2013 semester. Of the 14 students, 13 students made their first oral presentation. All 13 students, (100%; 13/13) received a score of 80% or higher on the first oral presentations covering areas related to historical development and other areas related to forensic sciences. There were 13 students participated in the second oral presentation and 11 out of 13 students (85%) received a score of 80% or higher in the second oral presentation. The other two students received a score of 70%.

Spring 2013-14: There were 24 students enrolled in FSC 435 capstone course for spring 2013-14 semester. Of the 24 students, 22 students (22/24; 92%) received a score of 80% or higher on the two oral presentations covering areas related to historical development and other areas related to forensic sciences.

Related Action Plans (by Established cycle, then alpha):
For full information, see the Details of Action Plans section of this report.

Action plan
Established in Cycle: 2011-2012
If some of the students fail to achieve the proposed target, they will be given additional attention detailing the requirements ...

SLO 2: Scientific principles
Students completing the program will gain a strong theoretical understanding of the basic scientific principles of their respective discipline and how they relate to the practice of Forensic Science.

Related Measures:

M 3: Student Survey
A survey will be administered to all students in order to measure perceived knowledge from their college experience. The survey will request perceptions regarding the program’s success at instilling a fundamental understanding of the basic scientific principles of forensic science, its advantages, limitations, and logical and technical expertise related to laboratory operations. This survey will be administered in the senior capstone course FSC 435.

Source of Evidence: Capstone course assignments measuring mastery

Target:
70% of the students who take FSC 445 (Crime Doc.) are expected to rate their learning experience as a score of 3 or better on a scale from 1-5 on a student survey.

Findings (2013-2014) - Target: Met
Fall 2013-14: There were 13 students enrolled in FSC 445 class for Fall 2013 semester. Out of the 13 students 12 took the survey. 100% of the students (12/12) rated their learning experience as satisfactory with a 3 or higher score in a scale of 1-5.

Spring 2013-14: There were 15 students enrolled in FSC 445 class for Spring 2013-14 semester. All 15 students (100%) rated their learning experience as satisfactory with a 3 or higher score in a scale of 1-5.

M 4: Reflective Essay
Students will write a reflective essay in FSC 445 (Crime Scene documentation) in order to demonstrate they have a fundamental knowledge of the scientific principles of their respective field of expertise as they relate to the practice of Forensic Science. These principles will cover the basics of crime scene documentation and preservation, evidence submission techniques, laboratory investigative techniques, and the role of the discipline in bringing about justice. Essays will be graded on 1) writing proficiency; 2) knowledge; 3) complexity of technical expertise; 4) conclusions drawn from scenarios (each component will count 25%). NOTE: FSC 445 is taught in the spring semesters only, thus there is no data to report for the fall semester of 2010.

Source of Evidence: Written assignment(s), usually scored by a rubric

**Target:**
80% of the students will score a total of at least 75% or higher in the following categories; 1. writing proficiency (20/25), 2. scientific knowledge (20/25), 3. complexity of technical expertise (20/25) and 4. conclusion drawn from scenarios (15/25). This score will demonstrate a fundamental knowledge of the scientific principles of their respective field of expertise as they relate to the practice of Forensic Science.

**Findings (2013-2014) - Target: Met**
Fall 2013-14: 92% of the students (12/13) received a score of 75% or higher on their reflective essays and/or writing assignment in FSC 445 course.

Spring 2013-14: 100% of the students (15/15) received a score of 75% or higher on their reflective essays and/or writing assignment in FSC 445 course that covers writing proficiency, scientific knowledge, and technical expertise.

**SLO 3: Technological skills**
Students completing the program will acquire the requisite level of technological skills necessary to compete within the modern employment or higher education arena.

**Related Measures:**

**M 1: Exit Survey**
Surveys will be administered in FSC 435 or FSC 445 to determine whether the student believes he/she has acquired adequate technological skills relevant to the demands of their anticipated career or graduate school aspirations. Using a five point scale (1-5), students will be asked to answer specific inquiries regarding proficiency in respective job dimensions and to identify particular problem areas, if possible.

Source of Evidence: Exit interviews with grads/program completers

**Target:**
80% of student respondents will rate the forensic science program as satisfactory (mean of 3 or more on the five-point scale) in learning technological and instrumental skills in laboratory classes and will identify particular problem areas.

**Findings (2013-2014) - Target: Met**
Fall 2013-14: There were Fourteen students enrolled in the FSC 435 class and thirteen students took the exit survey. All the thirteen students who took the survey, (13/13; 100%) rated their experience as satisfactory at the program level as well as at the university level (3 or higher on a five point scale).

Spring 2013-14: There were 21 students who took the survey in the FSC 435 class. Twenty students out of 21 who took the survey, (20/21; 95%) rated their experience as satisfactory at the program level as well as at the university level (3 or higher on a five point scale).
**Related Action Plans (by Established cycle, then alpha):**
For full information, see the *Details of Action Plans* section of this report.

**Moot court room exercise**
*Established in Cycle: 2005-2006*
Students will be required to engage in a mock trial exercise as preparation for presenting forensic science expertise in a adver...

**M 7:Final exam in FSC 445 Lab**
All forensic science major students are required to take the FSC 445 lab final exam. There is a considerable amount of technological skills required to complete the lab final exam. All students taking this lab will learn about mapping the crime scene, photography, collecting, and preserving evidence under standard collection techniques. NOTE: FSC 445 is taught in the spring semesters only, thus there is no data to report for the fall semester of 2010.

Source of Evidence: Writing exam to assure certain proficiency level

**Target:**
75% of the students who take the FSC 445 lab final exam are required to score 80% or higher.

**Findings (2013-2014) - Target: Met**
Fall 2013-14: 77% of the students (10/13) received a score of 80% or higher on their final exam in FSC 445 lab course covering technological aspects.

Spring 2013-14: 100% of the students (15/15) received a score of 80% or higher on their final exam in FSC 445 lab course covering technological aspects.

**SLO 4:Communication of Scientific Principles**
Students will acquire the ability to thoroughly communicate scientific principles and analytical results in a classroom setting.

**Related Measures:**

**M 2:Writing Assignments**
The students are expected to write one or two writing assignments in the crime scene documentation course (FSC 445/L) for a minimum of about 5000 words. The assignment will cover topics related to crime scene documentation, crime scene sketching, crime scene photography/video, evidence collection and preservation, along with a review of literature. One or more assignments will be used for evaluating the writing proficiency. The scientific principles and analytical results discussed in the assignment as well as topics chosen, contents, clarity of writing, writing skills, language, grammar etc will be used for evaluation.

Source of Evidence: Written assignment(s), usually scored by a rubric

**Target:**
80% of students will achieve a score of 75% or better on their final oral presentation of the mock crime scene investigation in FSC 445.

**Findings (2013-2014) - Target: Met**
Fall 2013-14: 92% of the students (12/13) received a score of 75% or better on their oral presentation of the mock crime scene investigation in FSC 445 course. Spring 2013-14: 100% of the students (15/15) received a score of 75% or better on their oral presentation of the mock crime scene investigation in FSC 445 course.

**M 8:Senior capstone writing assignments**
The students are expected to write two assignments in their senior capstone course (FSC 435) for a minimum of about 5000 words. The assignment will cover topics related to forensic science policies, procedures, other methods or a review of literature. One of the two assignments that is used to upload to blackboard will be used for evaluation. The scientific principles and analytical results discussed in the assignment will be used as an evaluating tool. The evaluations will be based on topics chosen, contents, clarity of writing, writing skills, language, grammar etc. The analytical procedures or policies covered in the assignments must address all legal standards, requirements and limitations as set forth by the accrediting bodies. NOTE: FSC 435 (Senior Capstone) is taught in the spring semesters only, thus there is no data to report for the fall semester of 2010.

Source of Evidence: Capstone course assignments measuring mastery

**Target:**
75% of the students who submit their writing assignment will score 75% or higher.

**Findings (2013-2014) - Target: Met**
Fall 2013-14: There were 14 students enrolled in FSC 435 capstone course in Fall 2013 semester. Of the 14 students, 10 submitted their second writing assignment (literature review) and 8 out of 10 (80%) scored 75% or more on their writing assignment involving communication of scientific principles. The other two scored 70% in the second writing assignment.

Spring 2013-14: There were 24 students enrolled in FSC 435 capstone course in Spring 2013-14 semester. Of the 24 students, 22 students (22/24; 80%) scored 75% or more on their writing assignment involving communication of scientific principles.

**SLO 5:Communication Skills**
Students completing the program must be able to demonstrate competency in written and oral communication skills.

**Related Measures:**

**M 2:Writing Assignments**
The students are expected to write one or two writing assignments in the crime scene documentation course (FSC 445/L) for a minimum of about 5000 words. The assignment will cover topics related to crime scene documentation, crime scene sketching, crime scene photography/video, evidence collection and preservation, along with a review of literature. One or more assignments will be used for evaluating the writing proficiency. The scientific principles and analytical results discussed in the assignment as well as topics chosen, contents, clarity of writing, writing skills, language, grammar etc will be used for evaluation.

Source of Evidence: Written assignment(s), usually scored by a rubric

**Target:**
80% of students will achieve a score of 75% or better on final writing assignment required in FSC 445.

**Findings (2013-2014) - Target: Met**
Fall 2013-14: 92% of the students (12/13) received a score of 75% or better on their writing assignment in FSC 445 course.
Spring 2013-14: 100% of the students (15/15) received a score of 75% or better on their writing assignment in FSC 445 course.

**Related Action Plans (by Established cycle, then alpha):**
For full information, see the Details of Action Plans section of this report.
Writing consultations
Established in Cycle: 2013-2014
Students will be made aware of the University Writing Center and strongly encouraged to use its resources. Students will also be...

M 6: Oral Presentations
Each student is required to make two oral presentations in the senior capstone course FSC 435 (Policies and procedures). Students may choose topics related to laboratory test procedures, quality control methods, implementation of policies, instrumentation etc. The presentations are evaluated based on presentation skills such as clarity, eye contact with audience, use of language, scientific terminologies and knowledge. All the presentations must include a historical portion of the development of forensic science and/or the structure of a forensic laboratory and the types of services provided to law enforcement agencies and the public.

Source of Evidence: Presentation, either individual or group

Target:
The structure of the presentation, and scientific terminologies used by the students are used to evaluate the communication skills during the oral presentation. 75% of the students will make a score of 3 or better in a 1-5 scale.

Findings (2013-2014) - Target: Met
Fall 2013-14: There were 14 students enrolled in FSC 435 capstone course for Fall 2013 semester. Of the 14 students, 13 students made their first oral presentation. All the 13 students, (100%; 13/13) received a 3 or higher score in a scale of 1-5 on the first oral presentations covering areas related to the structure of the presentation and scientific terminologies. There were 13 students participated in the second oral presentation and 11 out of 13 students (85%) received a 3 or higher score in a scale of 1-5 in the second presentations covering areas related to the structure of the presentation and scientific terminologies.

Spring 2013-14: There were 24 students enrolled in FSC 435 capstone course for Spring 2013-14 semester. Of the 24 students, 20 students, (20/24; 83%) received a 3 or higher score in a scale of 1-5 on the two oral presentations covering areas related to the structure of the presentation and scientific terminologies.

Other Outcomes/Objectives, with Any Associations and Related Measures, Targets, Findings, and Action Plans

O/O 6: Student Progression
The School of Criminal Justice will demonstrate reasonable success in retaining its undergraduate majors in forensic science.

Related Measures:

M 9: Student Retention
The School of Criminal Justice will demonstrate reasonable success in retaining its undergraduate majors in forensic science. The retention rate will be computed based on the following formula: No. of students returned / Total No. of students - No. of degrees awarded

Source of Evidence: Administrative measure - other

Target:
The retention rate for undergraduate majors in forensic science will be 70%. (Note: IR does not make data available until the Fall term of the next academic year; thus student retention for this objective will always be computed for the immediate past academic year.)
Findings (2013-2014) - Target: Met
158 (of 239) undergraduate majors in forensic science returned in the Fall 2012 term, and 27 (of 239) were awarded degrees; as such, the retention rate (as computed from data made available by Institutional Research) was 75% (158 of 212).

Details of Action Plans for This Cycle (by Established cycle, then alpha)

Moot court room exercise
Students will be required to engage in a mock trial exercise as preparation for presenting forensic science expertise in a adversarial cross examination setting.

Established in Cycle: 2005-2006
Implementation Status: Terminated
Priority: Low

Relationships (Measure | Outcome/Objective):
Measure: Exit Survey | Outcome/Objective: Technological skills

Implementation Description: Spring 2007
Responsible Person/Group: Dr. Bala

Revise exit survey
The student exit survey has been revised to incorporate questions regarding the outcomes/objectives originally measured by the employer survey.

Established in Cycle: 2007-2008
Implementation Status: Finished
Priority: High
Implementation Description: Fall 2008
Responsible Person/Group: FSC faculty, AJ Chair

Action plan
If some of the students fail to achieve the proposed target, they will be given additional attention detailing the requirements of the course. This will include provide additional reading material, help with writing and speaking assignments and have them use the speaking and writing centers.

Established in Cycle: 2011-2012
Implementation Status: Finished
Priority: Medium

Relationships (Measure | Outcome/Objective):
Measure: Oral Presentations | Outcome/Objective: Historical Development, structure, and services

Implementation Description: Students will be monitored on their performance in writing and speaking assignments. Any time the target is not met, this action plan will be implemented as described in the 'Description' section
Responsible Person/Group: Faculty teaching the capstone course.
Additional Resources Requested: none
Budget Amount Requested: $0.00 (no request)

Action plan to improve communication skills
If some of the students fail to achieve the proposed target in communication skills, they will be given additional attention detailing the requirements of the course. This will include provide additional reading material, help with writing and speaking assignments and have them use the speaking and writing centers.
Established in Cycle: 2011-2012
Implementation Status: Finished
Priority: High

Writing consultations
Students will be made aware of the University Writing Center and strongly encouraged to use its resources. Students will also be required to submit a draft reflective essay or a bulleted list at least two weeks prior to submission, so that the instructor can point out flaws which could be corrected in the final submission.

Established in Cycle: 2013-2014
Implementation Status: In-Progress
Priority: Medium

Relationships (Measure | Outcome/Objective):
Measure: Writing Assignments | Outcome/Objective: Communication Skills

Projected Completion Date: 05/06/2016
Responsible Person/Group: K. Balamurugan

Analysis Questions and Analysis Answers

What specifically did your assessments show regarding proven strengths or progress you made on outcomes/objectives?
The data from objectives and outcomes indicate that all objectives, for assessments where data was gathered, were met. These data provide measures that the BS forensic science program is accomplishing what it was designed to do. The survey and the information provided by the students indicate the overall satisfaction of the students in different components of the Forensic Science program. Several students graduate each semester, indicating the success of the program and the Forensic Science program shows continued improvement in student enrollment and graduation. This is accomplished by the rigorous standards and quality set forth in the program plan.

What specifically did your assessments show regarding any outcomes/objectives that will require continued attention?
There were no issues observed related to the objectives/outcome in the BS Forensic Science program. However, we continue to monitor and improve the student performance in the class room and in the laboratories. Special attention is given to the FSC 435 (Forensic Science Policies and Procedures - senior capstone) and FSC 445/L (Crime Scene documentation/lab) classes. Both courses are writing and speaking intensive and we encourage the students to make use of the speaking center for their oral presentations and the writing center for improving their writing skills. Both the speaking and the writing centers play a vital role in improving the student's performance. We continue to monitor the performance of students in other areas as well. The FSC 445L lab course also offers computer assisted drawings training where the students gain knowledge in using computers for scientific purposes.

Annual Report Section Responses

Program Summary
The BS Forensic Science program is unique in the State of Mississippi, that this is the only program that offers a multidisciplinary approach that covers multiple areas of Forensic Science with different emphasis plan. The data collected during this academic year, and the analysis indicate that the program is accomplishing the objectives as specified in the assessment process. The BS program in Forensic Science is continuing to grow with students pursuing degrees in the Criminal Justice, Chemistry/Biochemistry, Anthropology, and Biological Sciences emphasis areas. Very few students have chosen Physics and Polymer emphasis areas. The enrollment and the graduation rate of the students in this program continue to grow and attracts several out of state students. Targets set in all Outcome/Objectives are being met which reflects the quality of education the students are receiving. Given the complexity and fast changing technology in forensics, students must be
challenged to a higher standard for our program to continue to grow and meet the needs of employers looking to hire our students.

**Continuous Improvement Initiatives**

One of the most important qualities a forensic science student must possess is the ability to communicate both in writing and speaking. The need to look at the curriculum for all areas and ensure that these qualities are emphasized in each area is going to be a critical component of the program. A reduction in the number of students per class (so as not to take time away from the lecture material) will be required in order to allow students to present both writing and speaking assignments. This may mean that classes have to be taught each semester rather than every other semester so that students have the opportunity to complete their degree within a reasonable time frame.

Special attention is given to the FSC 435 (Forensic Science Policies and Procedures - senior capstone) and FSC 445/L (Crime Scene documentation/lab) classes. Both courses are writing and speaking intensive and we encourage the students to make use of the speaking center for their oral presentations and the writing center for improving their writing skills. Both the speaking and the writing centers play a vital role in improving the student’s performance. We continue to monitor the performance of students in other areas as well. Speaking and writing assignments are introduced in other Forensic Science courses such as FSC 301 (Forensic Biology I) and FSC 321 (Forensic Biology II). Two additional laboratory courses, FSC 301L (Serology lab) and FSC 321L (Forensic DNA analysis lab) will be offered in the near future to help the students with laboratory based analysis. These courses will provide hands on experience to the students and improve their laboratory skills.

**Closing the Loop**

The Forensic Science program in the School of Criminal Justice made numerous revisions to the Forensic Science baccalaureate assessment plan. Several initiatives were implemented to address deficiencies which persisted earlier in areas such as oral communication and writing skills. Actions plans were constructed for FSC 435 (Forensic Science policies and procedures) and FSC 445/L (Crime Scene documentation) classes.

Even though the target for outcomes/objectives are met this year, we will continue to monitor the performance of the students in all areas related to the outcome and see if raising the target will achieve better quality in the overall performance of the students. Besides the speaking and writing intensive courses (FSC 435 and FSC 445/L), we have introduced speaking and writing assignments in other courses as part of the syllabus to improve the writing and speaking skills of the students in the program. We will continue to monitor the areas that need improvement and make every effort to achieve the target. The results from this assessment indicate the program is meeting or exceeding those objectives and standards measured in this analysis.

The future of the Forensic Science program depends on the successful recruitment of high school seniors from local, outside, and out of state schools. Additional scholarships, tuition waiver, and financial aid to the students are some of the means of increasing student enrollment in the program. We believe the strength of our program is measured in the success of our students. The employment market for the Forensic Science students is very strong and several students who have graduated have secured positions with private and public entities including law enforcement agencies.