UNIT REPORT

Forensic Science MS/PhD
Assessment Plan Summary

Forensic Science MS/PhD

Ability to Conduct Original Research

Goal Description:

Students engaged in faculty-sponsored research are encouraged to publish or present results externally.

RELATED ITEMS/ELEMENTS

RELATED ITEM LEVEL 1

Students will Produce Research of Publishable Quality

Learning Objective Description:

Students actively engaged in research projects sponsored by program faculty will publish their findings in journals or present their data at scientific meetings.

RELATED ITEM LEVEL 2

Preparation of Research Materials for Publication/Presentation

Indicator Description:

Students will contribute to the knowledge base of forensic science and produce research directed at improving the practice of forensic science. This may be demonstrated by publication of research in a peer reviewed scientific journal or national/international conference proceeding (e.g. American Academy of Forensic Sciences Annual Meeting). Publication of student research in journals and at national or international conferences serves to demonstrate the value and quality of the work to the forensic science and/or scientific community.

Criterion Description:

Program-sponsored research will result publication rates of 0.5 publications/student (50%) at the MS level and 1 paper/student (100%) at the PhD level. Publication rates at the MS or PhD level will be calculated as follows: Number of publications involving MS or PhD students / number of full-time students enrolled in the MS or PhD program during the academic year.

Findings Description:

During AY 16-17 there were a total of 63 program-sponsored publications by faculty or students in the Department of Forensic Science. Of these, 23 were peer-reviewed scientific journal articles (37%) and 40 were conference proceedings (63%).

A total of 28 publications during AY 16-17 involved MS students. Based on full-time enrollment during this period (27), the MS students produced on average 1.0 publication/student, above the 0.5 criterion.

A total of 25 publications during AY 16-17 involved PhD students. Based on full-time enrollment during this period (12), the PhD students produced on average 2.1 publications/student, well above the 1.0 criterion.

RELATED ITEM LEVEL 3

Publication Type

Action Description:

Continue to place emphasis on publications in peer reviewed scientific journals rather than conference proceedings, while recognizing that both are required for degree completion at the doctoral level. Strong emphasis will be placed on prompt publication of dissertation research in high impact scientific journals, and formal progress reviews of doctoral students will reinforce this requirement.

Develop Specific Knowledge Base

Goal Description:

Develop specific knowledge base in forensic science to prepare graduates for future success.

RELATED ITEMS/ELEMENTS

RELATED ITEM LEVEL 1

Detailed Competence of Core Course Material

Learning Objective Description:

Students will command detailed competence of core course material in forensic science. The Forensic Science Education Programs Accreditation Commission (FEPAC) defines the core forensic science topics that must be incorporated into the graduate curriculum. These include analytical chemistry and instrumental methods of analysis, drug chemistry/toxicology, microscopy and trace evidence, forensic biology,

and pattern evidence. This objective specifically addresses student learning, development and outcomes associated with the core forensic disciplines.

RELATED ITEM LEVEL 2

The Forensic Science Assessment Test (FSAT)

Indicator Description:

The Forensic Science Assessment Test (FSAT) was developed as an assessment tool for forensic science academic programs in the United States and is administered by the American Board of Criminalistics (ABC). The content and administration of the examination were modeled on ABC certification exams and is used by the program to assess trends which may indicate strengths and weaknesses within the curriculum and to evaluate its relevance. The FSAT exam covers a wide variety of forensic disciplines including some that are not part of the core FEPAC curriculum, such as firearms, toolmarks and questioned documents.

Criterion Description:

The overall average score of the FSAT for SHSU shall be above the median for all participating graduate programs in forensic science nationally.

Findings Description:

All fourteen graduating students participated in the FSAT examination in the Spring of 2017. Due to scheduling of the examination, students at SHSU participate in the FSAT before all of their coursework is completed, placing them at a slight disadvantage. SHSU did meet the criteria, achieving an average score of 70% (falling above the median of all colleges nationally – 65%). During the 2017 cycle, a total of 126 students from 10 universities participated in the FSAT. In an attempt to motivate students to participate, the FSAT examination was included as a graded assessment in a core course (FORS 5116).

RELATED ITEM LEVEL 3

FSAT

Action Description:

Continue to include the FSAT as a graded piece of assessment. Participation in the FSAT will also be re-evaluated during the 2018 Quality Review.

Integration of Knowledge, Skills, and Abilities

Goal Description:

Students completing the Master of Science in Forensic Science will demonstrate integration of knowledge, skills and abilities through an independent research project conducted in an environment conducive to research and scholarly inquiry.

RELATED ITEMS/ELEMENTS

RELATED ITEM LEVEL 1

Students will Demonstrate Competency in Research

Learning Objective Description:

Students completing the Master of Science in Forensic Science will demonstrate integration of knowledge, skills and abilities through an independent research project conducted in an environment conducive to research and scholarly inquiry.

RELATED ITEM LEVEL 2

Capstone Research Report Scoring Methodology

Indicator Description:

Consistent faculty-developed scoring methodology will be applied to the capstone research report for FORS 6094 – Forensic Science Research. The scholarly report will demonstrate advanced discipline-specific knowledge, investigation, and problem-solving ability.

Criterion Description:

At least 70% of students will be assessed as “satisfactory” or higher using the uniform faculty-developed rubric. The final report will be scored by each member of the committee, consisting of a minimum of three individuals (one of whom must be external to the department).

Findings Description:

All students (100%) performed satisfactorily in their capstone research report in accordance with the faculty-developed rubric. Of the 14 students enrolled, all received satisfactory final scores and satisfactory scores in their final technical report (which has consistently presented the greatest challenge to students). Scores were assigned by a capstone research committee consisting of at least three members, one of whom was external to the department in accordance with accreditation standards (Forensic Science Education Programs Accreditation Commission).

A total of 42 reviews were received for the 14 students, 14 of whom were external reviewers. Five were deemed satisfactory (acceptable) and 9 were rated as excellent. Of the 6 students enrolled in FORS 6014 who transitioned into the PhD program, all (100%) were rated as excellent.

RELATED ITEM LEVEL 3

Capstone Research Performance

Action Description:

Continue to enforce a formalized timetable for submission of draft capstone reports and document the receipt and return of drafts reports. Continue to emphasize publications in peer-reviewed scientific journals over national conference proceedings.

Job Readiness

Goal Description:

Graduates will possess the required theoretical knowledge and technical skill set to be effective in the workplace.

RELATED ITEMS/ELEMENTS

RELATED ITEM LEVEL 1

Graduates will Acquire Necessary Workplace Skills

Learning Objective Description:

Graduates have developed the necessary knowledge, skills and abilities for successful employment in a forensic setting.

RELATED ITEM LEVEL 2

Employer Survey

Indicator Description:

An Employer Satisfaction Survey is conducted twelve months after graduation. Employers are asked to assess whether SHSU graduates posses the appropriate workplace skills. Using a scale of 1 to 4, (1=very unsatisfactory, 2=unsatisfactory, 3=satisfactory, and 4=highly satisfactory), employers assess job readiness.

Criterion Description:

At least 90% of all responses must be ranked as 3 (satisfactory) or 4 (highly satisfactory).

Findings Description:

During the summer of 2017, surveys were sent to each employer of the seven 2016 forensic science graduates employed within the forensic community. The response rate for the survey was 86% (6 out of 7). The results of the survey indicated that the criterion was met, with 100% of the employers indicating satisfactory (67%) or highly satisfactory (33%) on all aspects of the survey. Among the employers responding to the survey, 100% were public sector forensic laboratories.

RELATED ITEM LEVEL 3

Employer Satisfaction

Action Description:

SHSU graduates in forensic science continue to meet the expectations of forensic science employers. The department attributes this in large part due to the hands-on, laboratory-based instructional focus of the current curriculum. Experience using scientific instrumentation (hardware and software) that is currently used by practitioners in the field is critical in terms of graduate success. The department must continue to invest in these resources.

Update to Previous Cycle's Plan for Continuous Improvement

Previous Cycle's Plan For Continuous Improvement (Do Not Modify):

Although the Department of Forensic Science was successful recruiting an additional faculty member for the Fall 2016 semester, increased enrollment in full-time MS and PhD students greatly exceeds the physical space limitations within the Chemistry and Forensic Sciences Building. Limitations in teaching laboratories, research laboratories and adequate support for operational costs and capital outlay present the greatest challenges to both the MS and PhD programs.

Update of Progress to the Previous Cycle's PCI:

The addition of a growth faculty position this year positively impacted both the MS and PhD programs and will help offset faculty burnout and clustering effects associated with supervision of graduate student research. Although the department was successful increasing publication outputs, particularly in peer-reviewed scientific journals, the absence of sufficient laboratory space to accommodate faculty and students needs has not yet been addressed.

Physical Space

Closing Summary:

The Department of Forensic Science occupies insufficient space on the second floor of the Chemistry and Forensic Sciences Building. The absence of physical space and its impact on the ability of the department to fulfill its mission has been documented as a critical issue in assessment plans dating back to 2014. Without a plan in place to address this need, graduate programs will be unable to admit additional students into masters and doctoral programs.