

## Program-Level Assessment: Annual Report

Program: Forensic Science

Department: Sociology and Anthropology

Degree or Certificate Level: BS

College/School: Arts and Sciences

Date (Month/Year): June/2020

Primary Assessment Contact: Richard Colignon & Erik Hall

In what year was the data upon which this report is based collected? 2019-2020

In what year was the program's assessment plan most recently reviewed/updated? 2017

### 1. Student Learning Outcomes

Which of the program's student learning outcomes were assessed in this annual assessment cycle?

This year we assessed Goal #4 in a four-goal cycle. Goal #4 states: Forensic Science majors will understand appropriate patterns of Career Planning and Professional Development.

Learning Outcomes:

- describe the role of ethical issues inherent in forensic science.
- compare and contrast basic professional orientations; or, identify assumptions in analyses and arguments
- apply ethical standards to examples or situations

### 2. Assessment Methods: Student Artifacts

Which student artifacts were used to determine if students achieved this outcome? Please identify the course(s) in which these artifacts were collected. Clarify if any such courses were offered a) online, b) at the Madrid campus, or c) at any other off-campus location.

We assessed these outcomes by reading papers from Crime Scene Investigations FRSC 4550/4551 course and a major assignment in ANTH 3280, Forensic Anthropology as the most synthetic of forensic science courses. This review would serve as a direct measure of our student learning outcomes. Madrid student outcomes were not used as Madrid has no Forensic Science Program. Artifacts came from Crime Scene (FRSC 4550/4551) and the Forensic Anthropology (ANTH 3280) and other internship and workshop opportunities, students test the knowledge and skills they have attained, including those surrounding professional and ethical issues, through observation and participation in actual forensic contexts and discussions with professionals in the field. FRSC 4550/4551 and ANTH 3280 were delivered on campus, while FRSC 4000, Practicum, was located off campus in multiple locations, including the Crime Lab for the City of St. Louis.

### 3. Assessment Methods: Evaluation Process

What process was used to evaluate the student artifacts, and by whom? Please identify the tools(s) (e.g., a rubric) used in the process and include them in/with this report.

This year our direct measures of forensic science student performance was based reports from the Crime Scene Investigation course and a major assignment in the Forensic Anthropology course for AY 2019-20. A committee (Professors Vermilion, Colignon, and Hall) reviewed a sample of the papers and assignments. They graded each student's artifact (paper or assignment) on the three outcomes using a rubric on a scale of 1-5 (1 = unacceptable, 3 = adequate, 5 = excellent) for each of the learning outcomes. These scores were aggregated across students to provide a quantitative measure of student's effectiveness on the outcomes of goal four: Professional planning and professional development. (see Appendices 1 & 4)

We typically use Indirect Measures of the learning outcomes. For example, in previous years we used Senior Exit Focus Groups with graduating Forensic Science majors administered in April to Forensic Science BS majors. Unfortunately, the Covid-19 transition interrupted our abilities.

#### 4. Data/Results

What were the results of the assessment of the learning outcomes? Please be specific. Does achievement differ by teaching modality (e.g., online vs. face-to-face) or on-ground location (e.g., STL campus, Madrid campus, other off-campus site)?

The committee's grading indicates that the students demonstrate greater proficiency on outcomes 2 and 3, "*compare and contrast basic professional orientations; or, identify assumptions in analyses and arguments*"; and "*the student apply ethical standards to examples or situations,*" respectively. As a group, the students were stronger on these outcomes. Scores ranges between 2 and 5 with averages of 4.3 and 3.77, respectively. *The committee rated outcome 1 "describe the role of ethical issues inherent in forensic science," weakest among the three outcomes at 3.33.*

The committee average scores ranged from 3-5 on outcomes 2 and 3 indicating above average to proficient. Outcome 1 (*describe the role of ethical issues inherent in forensic science*) was a bit more challenging. Scores on outcome 1 provided wide variation with 2-5. The outcome itself is demanding and we would expect it to show wide variation. It does, however, provide the committee with either a challenge for our instruction or recognize the outcome as too vaguely worded for our students. Although a 3.33 average is above adequate and suggests we work to improve our students' abilities to address this outcome.

#### 5. Findings: Interpretations & Conclusions

What have you learned from these results? What does the data tell you?

Our instruction for career planning and professional development were good but can be strengthened. However, scores on outcome 1 provided wide variation with 2-5. The outcome itself may be vague and we would expect it to show wide variation. It does, however, provide the committee with either a challenge for our instruction or recognize the outcome as too vaguely worded for our students. Although a 3.33 average is above adequate and suggests we work to improve our students' abilities to address this outcome.

#### 6. Closing the Loop: Dissemination and Use of Current Assessment Findings

A. When and how did your program faculty share and discuss these results and findings from this cycle of assessment?

We will share the results at our annual retreat in early August or at a special meeting of the Forensic Science faculty before the beginning of the academic year. This will give us sufficient time to make any changes agreed upon by the faculty in light of our assessment report.

B. How specifically have you decided to use findings to improve teaching and learning in your program? For example, perhaps you've initiated one or more of the following:

Changes to the Curriculum or Pedagogies

- Course content
- Teaching techniques
- Improvements in technology
- Prerequisites
- Course sequence
- New courses
- Deletion of courses
- Changes in frequency or scheduling of course offerings

Changes to the Assessment Plan

- Student learning outcomes
- Student artifacts collected
- Evaluation process
- Evaluation tools (e.g., rubrics)
- Data collection methods
- Frequency of data collection

Please describe the actions you are taking as a result of the findings.

We are yet to decide on change in response to this years assessment. However, the results suggest change in course content to expand modules involved in ethical appreciation. In addition, we are likely to consider reframing the outcome measures to make them more specific and precisely rated. In the past, we have changed our curriculum with new courses and the frequency of course offering in response to assessment results.

If no changes are being made, please explain why.

**7. Closing the Loop: Review of Previous Assessment Findings and Changes**

**A.** What is at least one change your program has implemented in recent years as a result of assessment data?

Over that past two years forensic science majors mentioned the lack of depth in Forensic Chemistry. This course, and by extension, Crime Science Investigation, and Forensic Biology enrolled both majors and minors in the same courses. The majors have had freshman and sophomore chemistry and freshman Biology. However, the minors may not have had any chemistry or biology making the instruction next to impossible. The faculty instructors found this course challenging to teach as there was strong bi-modal skill/experience difference among the students.

This past year we used our assessment reports to plan to implement curricular change by offering Forensic Chemistry, Forensic Biology, and Crime Scene Investigation courses every semester with exclusive sections of either majors and non-majors/minors for alternative offerings. This would allow our instructors to better deliver the content at the appropriate level of science background of our students. Last year scheduled separate courses for our majors and non-majors for Forensic Biology and Crime Scene Investigation. This year we have hired an instructor with a Ph.D. in Chemistry so we can o do the same with Forensic Chemistry.

**B.** How has this change/have these changes been assessed?

This change is yet to be assessed as it was only started in the spring of 2020.

**C.** What were the findings of the assessment?

NA

**D.** How do you plan to (continue to) use this information moving forward?

We are hiring a Forensic Science Program Director to help implement our curricular and scheduling changes. In addition, we hired a Ph. D in Chemistry to teach Forensic Chemistry to our majors and we are in the process of hiring more Ph. D.s to teach our Survey courses.

**IMPORTANT: Please submit any assessment tools and/or revised/updated assessment plans along with this report.**

**Rubric for Assessing Goal #4**

Paper # \_\_\_\_\_ Last Name \_\_\_\_\_

**Goal 4: Forensic Science majors will understand appropriate patterns of Career Planning and Professional Development.**

1. Does the student describe the role of ethical issues inherent in forensic science?

Poor		Adequate		Excellent	
1	2	3	4	5	Not applicable to paper's topic

Comments:

2. Does the student compare and contrast basic professional orientations; or, identify assumptions in analyses and arguments?

Poor		Adequate		Excellent	
1	2	3	4	5	Not applicable to paper's topic

Comments:

3. Does the student apply ethical standards to examples or situations?

Poor		Adequate		Excellent	
1	2	3	4	5	Not applicable to paper's topic

Comments:

### Quantitative Forensic Science Assessment Goal 4 (2020)

Name	Outcome 1	Outcome 2	Outcome 3	Comments and Possible Recommendations
Student 1				Most comments on ethics are implied. We might consider sharing the rubrics at the beginning of the courses and encourage students to be explicit in their work.
Mary	3	4	4	
Erik	3	4	3	
Ric	3	4	3	
Student 2				Student identifies communication as an organizational impediment. Inadequate communication among lab departments, law enforcement, and medical professionals could compromise the outcome of a case. As other students commented, the budget restraints seem to be a serious problem underlying the lab's ability to acquire the upgraded technology necessary to process evidence.
Mary	4	5	5	
Erik	3	3	3	
Ric	3	5	5	
Student 3				Student identifies communication as an organizational impediment. Inadequate communication among lab departments, law enforcement, and medical professionals could compromise the outcome of a case. As other students commented, the budget restraints seem to be a serious problem underlying the lab's ability to acquire the upgraded technology necessary to process evidence.
Mary	2	4	3	
Erik	5	5	4	
Ric	4	5	4	
	<b>30</b>	<b>39</b>	<b>34</b>	
	<b>3.33</b>	<b>4.3</b>	<b>3.77</b>	
1=unacceptable 3=adequate 5=excellent	Outcome 1= role of ethical issues inherent in forensic science. Outcome 2= compare and contrast basic professional orientations. Outcome 3= apply ethical standards to examples or situations.			