

**Department of Sciences**  
Forensic Science Major (FOS)  
Assessment Plan

2016 - 2020

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## **Forensic Science (BS)**

### **Assessment Plan 2016 - 2020**

#### **Introduction**

Student learning outcomes assessment in higher education has been drawing a lot of attention as the nation has been engaged in discussion on educational effectiveness at all levels. An institution-wide commitment to student learning, engagement, and success are central tenets of the mission of John Jay College of Criminal Justice. The primary goal of the FOS major is to help students acquire the updated knowledge and skills which will enable them to become competent scientists in society. The departmental learning goals for the FOS major are focused on 4 main aspects: Reasoning, Knowledge, Practical Skills, and Communication. The annual assessment of the FOS Major is conducted to determine whether the Department is meeting the proposed learning goals and serving our students.

The Department of Sciences has always been dedicated to providing the students with a high quality education. In Fall 2009, the Mission Statement of the Department of Sciences was revised to articulate the Department's vision and communicate it to the students. Program learning goals were also clearly established to provide the outline of departmental commitments in 2010. Moreover, in order to ensure the execution of our commitments, a 5-year outcomes assessment plan was set up and carefully implemented from 2011 to 2015. Various assessments have been completed. These range from an assessment of the Capstone courses to an assessment of selected laboratory courses scaffolding from the 100- to the 400-level courses. Specific departmental learning goals have been evaluated, annual reports have been written for review and evaluation, and the findings have provided suggestions for improvement. The following assessment plan builds on the key findings and actions resulting from the implementation of the 2011-2015 assessment cycle.

#### **Mission**

The mission of the Department of Sciences is to provide all John Jay College students with a meaningful understanding of basic scientific principles, scientific methodologies, and to develop their quantitative and analytical reasoning skills. Furthermore, the Department seeks to:

- Present all forensic science students with a sound multidisciplinary foundation in science, to equip these students with the skills needed to pursue advanced educational opportunities, and to prepare them to become scientific professionals;
- Offer forensic science graduate students the opportunity to develop their scientific research skills and to provide them with in depth knowledge of current and cutting edge analytical techniques used by the forensic science community;
- Endow those students enrolled in the forensic science track of the Criminal Justice Doctoral program with the comprehensive theoretical background and analytical skills necessary to conduct independent research toward advancing the discipline of forensic science.

## Learning Goals

Upon completion of the FOS major, students will be able to

(Reasoning) Draw appropriate scientific conclusions from evidence and experimental data.

- Understand the role of creativity in problem solving
- Apply scientific principles in gathering and interpreting scientific data

(Knowledge) Acquire broad fundamental concepts, theories, and principles in physical and biological sciences.

- Use the primary scientific literature effectively in their own research
- Describe the scientific progress that has led to their research project

(Practical skills) Accrue hands-on laboratory and practical research skills, including emphasizing the role of quality assurance and objectivity in scientific data collection and how these relate to the system of professional ethics in science.

(Communication) Develop competence in oral and written forms of scientific communication.

## Assessment Philosophy

The primary mission of the Forensic Science Major (FOS) is to facilitate student success. One way to measure student success is to conduct student learning assessment. The assessment of student learning outcomes is able to provide the fundamental data for promoting Major effectiveness and the improvement of Major programs and courses. Effective and valuable assessment is best attained when there is a clear definition of what the learning objectives/outcomes and the assessment cycle are. Going beyond assessment of simple acquisition of knowledge, FOS assesses students' mastery of subject matter and their ability to apply knowledge in the areas of Reasoning (critical thinking and creativity), Practical skills, and Communication.

FOS assessment is a faculty-led assessment to ensure a direct focus on learning. The assessment of student learning outcomes is ultimately the assessment of Major's capability to provide learning opportunities consistent with its mission. The data obtained from assessment is used exclusively to assess and improve teaching and learning, **not** for the evaluation of individual faculty members or students.

# Curriculum Map

	Introductory courses		Intermediate Courses				300							400				Electives					
	BIO103/104	CHE103/104	CHE 201/202	CHE 220	MAT 214/242	PHY 203/204	MAT301	CHE 302	CHE 315	CHE 320/321	BIO 315	FOS 313	TOX 313	BIO 412/413	FOS 415/416	TOX 415/416	FOS 410/402	BIO 205	BIO 211	BIO 355	BIO 356	CHE 310	CHE 361
Understand the role of creativity in problem solving	I	I	I/D	I/D	I/D	I/D	D	D	D	D	R	R	R	M	M	M	M	√	√	√	√		
Apply scientific principles in gathering and interpreting scientific data	I	I	I/D	I/D	I/D	I/D	D	D	D	D	R	R	R	M	M	M	M	√	√	√	√	√	
Use the primary scientific literature effectively in their own research	I	I	D	D	D	D	D/R	D/R	D/R	D/R	R	R	R	M	M	M	M	√	√	√		√	√
Describe the scientific progress that has led to their research project	I	I	D	D	D	D	D/R	D/R	D/R	D/R	R	R	R	M	M	M	M	√	√	√		√	√
Accrue hands-on laboratory and practical research skills, including emphasizing the role of quality assurance and objectivity in scientific data collection and how these relate to the system of professional ethics in science	I	I	D	D	D	D	D	D	D/R	D	R	R	R	M	M	M	M				√		
Develop competence in oral and written forms of scientific communication	I	I	D	D	D	D	D	D	D/R	D	R	R	R	M	M	M	M			√	√		

Notes:  
 Levels of Performance: (I)Introduction, (D)development, (R)reinforcement, (M)astery

## **2016-2020 FOS Assessment Plan**

The Forensic Science Major will be assessed according to the plan described below.

### **Curriculum assessment activities**

#### **Fall 2015/Spring 2016**

- Revise the mission statement of Forensic Science Major
- Revise the programmatic learning goals
- For FOS401,
  - ❖ Set up surveys as assessment tools of FOS401 for internship supervisors and students.
  - ❖ Re-design rubric for FOS401 reflective statement to connect learning objectives with purpose of reflective statement
  - ❖ Set up new guidelines for FOS401 reflective statement and laboratory notebook
  - ❖ Assess FOS401 based on the revised rubrics and new guidelines

#### **Fall 2016/Spring 2017**

- For FOS402,
  - ❖ Set up new guidelines and provide writing workshops to FOS402 students about their written assignment and laboratory notebook writing
  - ❖ Revise rubric for poster presentation
  - ❖ Assess FOS402 based on revised rubric and guidelines

#### **Fall 2017/Spring 2018**

- For TOX416
  - ❖ Revise rubric and guidelines of oral presentation
  - ❖ Assess the oral presentation based on the revised rubric and guidelines.
- Scaffolding assessment for Chemistry-related courses (CHE104, CHE220, CHE321, and TOX416)
  - ❖ Revise rubrics which have been used for scaffolding assessment in Spring 2015
  - ❖ Choose the laboratory exercises for assessment
  - ❖ Develop the guidelines for laboratory report writing
  - ❖ Assess Chemistry-related courses based on the revised rubrics and new guidelines

#### **Fall 2018/Spring 2019**

- Scaffolding assessment for Biology-related courses (BIO104, CHE315, BIO315, and BIO413)
  - ❖ Revise rubrics which have been used for scaffolding assessment in Spring 2018
  - ❖ Choose the laboratory exercises for assessment
  - ❖ Develop the guidelines for laboratory report writing
  - ❖ Assess Biology-related courses based on the revised rubrics and new guidelines

Fall 2019/Spring 2020

- Scaffolding assessment for Criminalistics-related courses (CHE104, PHY204, FOS313, and FOS416)
  - ❖ Revise rubrics which have been used for scaffolding assessment in Spring 2019
  - ❖ Choose the laboratory exercises for assessment
  - ❖ Develop the guidelines for laboratory report writing
  - ❖ Assess Criminalistics-related courses based on the revised rubrics and new guidelines