

**FORENSIC SCIENCE EDUCATION PROGRAM ACCREDITATION COMMISSION
(FEPAC)**

In order to position FEPAC to expand the scope of accreditation, a reorganization of undergraduate standards 4.0 through 4.12 has been proposed and provided to all interested parties for comment. The comments received were considered by FEPAC at its annual meeting, February 17, 2019. The final versions reflects coursework that would be expected for individuals with majors in the respective specialties to prepare them for employment in these fields.

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Original Standards	Standard Changes Approved February 17, 2019
<p>4.0 UNDERGRADUATE PROGRAM STANDARDS An undergraduate forensic science program shall provide a basic foundation in the scientific and laboratory problem-solving skills necessary for success in a modern forensic laboratory. Such a program shall combine rigorous scientific and laboratory training with exposure to the breadth of forensic science disciplines, including forensic science practice, law enforcement, and ethics</p> <p>The undergraduate forensic science degree should not necessarily be viewed as a terminal degree but as a preparation for a variety of graduate and professional degrees including clinical and analytical chemistry, medicine, law, and biomedical research and advanced degrees in forensic science.</p>	<p>4.0 UNDERGRADUATE PROGRAM STANDARDS An undergraduate forensic science program shall provide a basic foundation in the scientific and laboratory problem-solving skills necessary for success in a modern forensic laboratory. Such a program shall combine rigorous scientific and laboratory training with exposure to the breadth of forensic science disciplines, including forensic science practice, law enforcement, and ethics.</p> <p>The undergraduate program in forensic science shall offer a coherent curriculum that reflects the mission and goals of the program and provides the student with the appropriate skills requisite for the bachelor's degree. The curriculum shall, at a minimum, ensure that each student:</p> <ol style="list-style-type: none"> 1. Obtain a thorough grounding in the natural or computer sciences; 2. Build upon this background by taking a series of more advanced science classes; and 3. Develop an appreciation of issues specific to forensic science through course work and laboratory-based instruction. <p>The undergraduate forensic science degree should not necessarily be viewed as a terminal degree but as a preparation for a variety of graduate and professional degrees including clinical and analytical chemistry, medicine, law, and biomedical research and advanced degrees in forensic science.</p>
<p>The following topics must be covered in the curriculum:</p> <ul style="list-style-type: none"> • Courtroom testimony • Introduction to law • Quality assurance • Ethics • Professional practice • Evidence identification, collection, processing 	<p>4.1a Forensic Science Professional Practice Topics The following topics must be covered in the curriculum:</p> <ul style="list-style-type: none"> • Courtroom testimony • Introduction to law • Quality assurance • Ethics • Professional practice

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<ul style="list-style-type: none"> • Survey of forensic science <p>Normally, a topic will involve multiple class meetings and may involve multiple learning modalities, such as lectures, laboratories, and demonstrations. Evaluation of student mastery of each topic may be done through a number of modalities, but the topic material must be specifically addressed in a syllabus and assessed. The program shall have clear procedures for assessing and documenting each student's progress toward fulfillment of these objectives.</p>	<ul style="list-style-type: none"> • Evidence identification, collection, processing <p>Normally, a topic will involve multiple class meetings and may involve multiple learning modalities, such as lectures, laboratories, and demonstrations. Evaluation of student mastery of each topic may be done through a number of modalities, but the topic material must be specifically addressed in a syllabus and assessed. The program shall have clear procedures for assessing and documenting each student's progress toward fulfillment of these objectives.</p>
	<p>4.1b Forensic Science Courses The following Forensic Courses must be covered in the curriculum.</p> <ul style="list-style-type: none"> • Forensic Science Survey Coursework – All tracks shall have at least 3 semester hours for a survey of forensic science class designed to ensure students are exposed the full breadth of forensic science disciplines in a full service crime laboratory. • Forensic Science Coursework – Each track shall have at least 6 semester hours in forensic science coursework that introduce students to methods, instrumentation, and concepts that are commonly associated with the professional practice of forensic science. At least 3 of the 6 semester hours semester hours must contain laboratory training. <p>Courses that fulfill this total 9-semester hour requirement can be used to cover the topics listed in Standard 4.1a. However, these same courses may not be used to fulfill any of the 4.2 Specific Emphasis Track Curricular Requirements.</p>
	<p>4.1c Forensic Science Capstone Experience A minimum of three (3) semester hours is required that should result in a capstone presentation, publication, or similar scholarly product. This requirement could be met in the following ways:</p> <ol style="list-style-type: none"> 1. Capstone Course 2. Internships

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	3. Independent Research
<p>4.1.1a-d Specific Curricular Requirements The specific curricular requirements that follow are based on the fact that most forensic scientists work in areas such as drug analysis, trace analysis, firearms and toolmarks, and forensic biology. Students seeking to work in alternative areas of forensic science, such as computer analysis, latent print recovery and comparison, or crime scene reconstruction, will require other curricula or further training. Because certain forensic science disciplines require more rigorous coursework than the minimum described below, in particular, more biology and chemistry, the program shall ensure that its curriculum is adequate to prepare students for specialization in subdisciplines of forensic science such as forensic biology, forensic chemistry, toxicology, or pattern evidence examination.</p>	<p>4.2 Specific Emphasis Tracks Curricular Requirements FEPAC currently accredits four concentrations (Criminalistics, Biology, Chemistry, and Digital) for forensic science programs.</p> <p>Curricula that follow the traditional criminalistics program (i.e., no concentrations, tracks, or specializations) should conform to the 4.2.1 Criminalistics Standards. Curriculum that have a specific concentration, track, or emphasis (e.g., Biology, Chemistry, or Digital Evidence) should conform to those curricula in Standards 4.2.2 through 4.2.4, respectively.</p>

Original Standards	Standard Changes Approved February 17, 2019			
	<p>4.2.1 Criminalistics These classes shall be consistent with the degree program and shall meet the needs of students following a general forensic science program or a program with no specified concentrations, tracks, or specializations.</p>	<p>4.2.2 Biology These classes shall be consistent with the degree program and shall meet the needs of students specializing in the biology sub-discipline of forensic science.</p>	<p>4.2.3 Chemistry These classes shall be consistent with the degree program and shall meet the needs of students specializing in the chemistry sub-discipline of forensic science.</p>	<p>4.2.4 Digital Evidence These classes shall be consistent with the degree program and shall meet the needs of students specializing in the computer science/information systems sub-disciplines of forensic science.</p>

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<p>4.1.1a Natural Science Core Courses</p> <ul style="list-style-type: none"> • Biology: at least one course, which includes an associated laboratory, in biology for science majors (4 semester hours). • Physics: at least two courses, each of which includes an associated laboratory, in physics for science majors (8 semester hours). Note: Calculus-based physics is preferred but not required. • Chemistry: at least four courses, each of which includes an associated laboratory. Two of the courses shall be in general chemistry for science majors (8 semester hours), and two shall be in organic chemistry for science majors (8 semester hours). 	<p>4.2.1a – Natural Sciences</p> <ul style="list-style-type: none"> • Biology: at least two courses, which include the co-requisite laboratory, in biology for science majors (minimum 7 semester hours). • Physics: at least two courses, which include the co-requisite laboratory, in physics for science majors (minimum 7 semester hours). Note: Calculus-based physics is preferred but not required. • Chemistry: at least four courses, which include the co-requisite laboratory. Two of the courses shall be in general chemistry for science majors (minimum 7 semester hours), and two shall be in organic chemistry for science majors (minimum 7 semester hours). • Mathematics: at least one course in differential and integral calculus (minimum 3 semester hours) and at 	<p>4.2.2a – Natural Sciences</p> <ul style="list-style-type: none"> • Biology: at least two courses, which include the co-requisite laboratory, in biology for science majors (minimum 7 semester hours). • Physics: at least two courses, which include the co-requisite laboratory, in physics for science majors (minimum 7 semester hours). Note: Calculus-based physics is preferred but not required. • Chemistry: at least four courses, which include the co-requisite laboratory. Two of the courses shall be in general chemistry for science majors (minimum 7 semester hours), and two shall be in organic chemistry for science majors 	<p>4.2.3a – Natural Sciences</p> <ul style="list-style-type: none"> • Biology: at least two courses, which include the co-requisite laboratory, in biology for science majors (minimum 7 semester hours). • Physics: at least two courses which include the co-requisite laboratory, in physics for science majors (minimum 7 semester hours). Note: Calculus-based physics is preferred but not required. • Chemistry: at least four courses, which include the co-requisite laboratory. Two of the courses shall be in general chemistry for science majors (minimum 7 semester hours), and two shall be in organic chemistry for science majors 	<p>4.2.4a – Natural Sciences Mathematics: at least two courses that include any combination of the following 3 semester hours courses:</p> <ul style="list-style-type: none"> • Business Calculus • Calculus I • Calculus II • Business Statistics • Statistics I • Statistics II <p>Sciences: at least two courses, which include the co-requisite laboratory (minimum 7 semester hours total) from the following list:</p> <ul style="list-style-type: none"> • Physics I • Physics II • General Chemistry I • General Chemistry II • Biology I • Biology II
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	least one course in statistics (minimum 3 semester hours).	(minimum 7 semester hours). <ul style="list-style-type: none"> Mathematics: at least one course in differential and integral calculus (minimum 3 semester hours) and at least one course in statistics (minimum 3 semester hours). 	(minimum 7 semester hours). <ul style="list-style-type: none"> Mathematics: at least one course in differential and integral calculus (minimum 3 semester hours) and at least one course in statistics (minimum 3 semester hours). 	
<p>4.1.1b Specialized Science Courses A minimum of 12 additional semester hours in more advanced coursework in chemistry or biology. Note: These classes shall be consistent with the degree program and shall meet the needs of students specializing in sub disciplines of forensic science. At least two of the classes shall include laboratory training. <i>Examples of specialized science courses include</i></p> <ul style="list-style-type: none"> Biochemistry Molecular biology Genetics Population genetics Inorganic chemistry 	<p>4.2.1b – Specialized Science Courses A minimum of 15 additional semester hours in more advanced coursework in chemistry or biology. Note: These classes shall be consistent with the degree program and shall meet the needs of students specializing in sub-disciplines of forensic science. Introductory level courses may not be used to fulfill this requirement. At least two of the classes shall include laboratory training (minimum 7 semester hours).</p>	<p>4.2.2b – Specialized Science Courses A minimum of 15 additional semester hours in more advanced coursework in chemistry or biology that provide greater depth or breadth and are consistent with the biology concentration specialization. Introductory level courses may not be used to fulfill this requirement. At least two of the classes shall include laboratory training (minimum 7 semester hours).</p>	<p>4.2.3b – Specialized Science Courses A minimum of 15 additional semester hours in more advanced coursework in chemistry or biology. Note: These classes shall be consistent with the degree program and shall meet the needs of students specializing in chemistry sub-disciplines of forensic science. Introductory level courses may not be used to fulfill this requirement. At least two of the courses shall include the associated laboratory (minimum 7 semester hours).</p>	<p>4.2.4b – Computer Science/Information Systems Courses A minimum of 12 semester hours of coursework shall include the following courses and topics:</p> <ol style="list-style-type: none"> At least one 3-semester hour course in computer programming (examples of acceptable languages include Java, Python, C++, Ruby, etc.) At least 6 semester hours in courses that cover the following topics:

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<ul style="list-style-type: none"> • Analytical/quantitative chemistry • Physical chemistry • Instrumental analysis • Cell biology • Pharmacology • Microbiology 				<ul style="list-style-type: none"> • Computer organization and structure • File systems and operating systems • Computer networking • Information assurance/network security • Data structures/database design • Web or mobile application design and development • Microelectric circuits.
<p>4.1.1c Forensic Science Courses A minimum of 15 semester hours in forensic science coursework must be covered in the curriculum. Of these 15 hours, 9 semester hours shall involve classes in forensic chemistry, forensic biology, physical methods, or microscopy and contain a laboratory component. Forensic science internships or independent study/research may not be used to fulfill the 9 semester</p>	<p>4.2.1c – Forensic Science Courses A minimum of 6 additional semester hours in advanced, upper level forensic science courses that provide greater depth in forensic science beyond an introductory level are required. The courses shall include laboratory training.</p>	<p>4.2.2c – Forensic Science (Biology) Courses A minimum of 6 additional semester hours in advanced, upper level forensic science courses that provide greater depth in forensic applications of biology beyond an introductory level are required. The courses shall include laboratory training.</p>	<p>4.2.3c – Forensic Science (Chemistry) Courses A minimum of 6 additional semester hours in advanced, upper level forensic science courses that provide greater depth in forensic applications of chemistry beyond an introductory level are required. The courses shall include laboratory training.</p>	<p>4.2.4c – Specialized Digital Forensic Science Courses A minimum of 6 additional semester hours is required in digital forensic science course work that covers the following topics:</p> <ul style="list-style-type: none"> • Acquisition of data • Network / “live” forensic analysis

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hours containing the laboratory component.				<ul style="list-style-type: none"> Exploitation of mobile devices
4.1.1d – Additional Advanced Courses A minimum of 19 additional semester hours of advanced, upper-level courses that provide greater depth in the student’s area of specialization beyond an introductory level in the program are required. Students can use these additional courses to begin to specialize along a forensic science discipline track.				
4.1.2b – Computer Science Courses A minimum of 12 semester hours of coursework shall include the following courses and topics: <ol style="list-style-type: none"> At least one 3-semester hour course in computer programming (examples of acceptable languages include Java, Python, C++, Ruby, etc.) At least 6 semester hours in courses that cover the following topics: <ul style="list-style-type: none"> Computer organization and structure 				<i>Renumbered as 4.2.4b (above), unchanged from 4.1.2b.</i>

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<ul style="list-style-type: none"> • File systems and operating systems • Computer networking • Information assurance/network security • Data structures/database design • Web or mobile application design and development • Microelectric circuits. 				
<p>4.1.2c – Specialized Digital Forensic Science Courses A minimum of 6 additional semester hours is required in digital forensic science course work that covers the following topics:</p> <ul style="list-style-type: none"> • Acquisition of data • Network / “live” forensic analysis • Exploitation of mobile devices 				<p><i>Renumbered as 4.2.4c (above), unchanged from 4.1.2c.</i></p>
<p>4.1.2d Capstone Event A minimum of 3 semester hours is required that should result in a capstone presentation, publication, or similar scholarly event. This requirement could be met in the following ways:</p> <ol style="list-style-type: none"> 1. Capstone Course 2. Internships 				<p><i>Removed, incorporated into 4.1c.</i></p>

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4.1.2e Forensic Science Courses A minimum of 6 semester hours is required in courses that provide breadth in traditional forensic sciences (e.g., DNA, Latent Prints, Trace Chemistry, Microscopy, Crime Scene Reconstruction, etc.).				<i>Removed, incorporated into 4.1b</i>

Original Standards	Standard Changes Approved February 17, 2019
<p>4.2 Program Director The program director shall be a full-time faculty member at the academic institution, appropriately qualified to meet the program's stated mission, goals, and objectives, and to provide leadership in forensic science education, research, and other scholarly activities so that students are adequately prepared for forensic science practice. The program director shall meet the following requirements:</p> <ol style="list-style-type: none"> a minimum of a Master's or professional degree appropriate for a forensic science program, and at least three years relevant experience as a forensic science practitioner in an operational forensic science laboratory setting; OR earned doctorate in an appropriate discipline, and three years experience as an academic forensic scientist that includes 	<p>4.3 Program Director The program director shall be a full-time faculty member at the academic institution, appropriately qualified to meet the program's stated mission, goals, and objectives, and to provide leadership in forensic science education, research, and other scholarly activities so that students are adequately prepared for forensic science practice. The program director shall meet the following requirements:</p> <ol style="list-style-type: none"> a minimum of a Master's or professional degree appropriate for a forensic science program, and at least three years relevant experience as a forensic science practitioner in an operational forensic science laboratory setting; OR earned doctorate in an appropriate discipline, and three years experience as an academic forensic scientist that includes appropriate <p align="right"><i>Renumbered, unchanged from 4.2.</i></p>

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appropriate educational, research, and service contributions to forensic science; and, 2. documented management experience appropriate to the duties assigned to the position.	educational, research, and service contributions to forensic science; and, 2. documented management experience appropriate to the duties assigned to the position.	
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