Purdue Northwest Curriculum Document Coversheet

Document No: (According to Instructions[1])	CES 17-01 REV CONCEN FRNSC SCI	**Approval by Faculty Senate:** (Leave Blank)	January 12, 2018
Proposed Effective Date	Fall 2018, or upon DOE approval	**Date Reviewed by Senate Curriculum Committee:** (Leave blank)	December 8, 2017
Submitting Department: (Name of both Dept & College/School)	Chemistry & Physics Department College of Engineering and Sciences	**Name(s) of Library Staff Consulted:** (NA if not required)	
Date Reviewed by Department	November 1, 2017		
Submission Date: (Date sent to College/School Curr Comm after Dept Review)	November 1, 2017	**Will New Library Resources Used?**	☐ **Yes** ☒ **No** Double-click to check Yes / No.
Date Reviewed by College/School Curriculum Committee	November 7, 2017	**Form 40 Needed?** (Double-click one box.) Registrar will complete Form 40 **after** Senate approval of document.	☐ **Yes** New courses or any course change, check **YES** ☒ **No** For **all other** curriculum matters, check **NO**.
Contact Person(s): (Name & Title)	Purna Das, Department Head Daniel Suson, Professor of Physics		

Unless marked "Leave blank" all parts of this form must be filled in **before** sending to Secretary of the Faculty Senate.

Task (check all that apply and fill out sections appropriate for each change).

☒ Program/Concentration Change or New Program/Concentration Proposal: Complete Section I, III, & IV

☐ Minor Change or New Minor Proposal: Complete Section I (delete sections III & IV)

☐ Certificate Change or New Certificate Proposal: Complete Section I (delete sections III & IV)

☐ Course Change or New Course Proposal: Complete Section II (delete sections III & IV)

Program name. Physical Sciences – Forensic Science Concentration

Degree name(s). (If applicable.) Bachelor of Science

[1] http://faculty.pnw.edu/blog/curriculum-document-approval-procedures/

Section I: This section is for changes in programs, minors and certificates

List the major changes in each program of study, minor or certificate.

Modifications to the General Physical Sciences – Forensic Science plan of study to incorporate approved FIS courses (FIS 14000, 14005, 24500, 35000, and 41000).). In addition, SOC 32400 is allowed as an alternative to CRJU 32400, and SOC 10000 is added to fulfill the prerequisite for SOC 32400. The total number of credits added is 18 (shown in BLUE on the proposed plan of study). Courses and unspecified electives removed are: SCI 14000, three Restricted Electives, one Free Elective, and the only CES Elective (shown in RED) on the current plan of study.

Several courses were moved from one semester to another in order to sequence the concentration courses properly so they are spread over many semesters and to allow students to meet the prerequisites for higher level courses in a timely fashion.

Impact on Students. (State "N/A" if proposal will not greatly affect students.)

Provides additional forensic oriented courses for students pursuing this concentration

Impact on University Resources. (State "N/A" if proposal will not require new resources, faculty or funds.)

We currently offer FIS 14000 and 14005 (replaced SCI 14000 and 14005) with qualified LTLs and laboratory resources of the department. The additional FIS courses can similarly be handled initially with qualified LTLs and the existing cross disciplinary laboratory resources. However, as the program grows there may be a need for at least one full time faculty.

Impact on other Academic Units. (State "N/A" if proposal will not affect other units.)(Include name of person in affected area discussed with)

N/A

Section II: This section is for changes in courses only

Subject. (Brief description of proposed change, addition or deletion.)

Justification. (Briefly list main reasons for proposed change, addition or deletion.)

Use the **Current** and **Proposed** spaces below for course changes only. Otherwise, mark "N/A"

Current: (Course changes: include entire present catalog information. Leave blank if new course)		**Proposed:** (Course changes: include entire new catalog information.)
Is this course also:	☐ **General Education**	**Currently Designated ExL (see instructions[2])** ☐

Course Objectives / Learning Outcomes. (New courses only. List main outcomes. If lengthy, attach separate page.)

Impact on Students. (State "N/A" if proposal will not greatly affect students.)

Impact on University Resources. (State "N/A" if proposal will not require new resources, faculty or funds.)

Impact on other Academic Units. (State "N/A" if proposal will not affect other units.) (Include name of person in affected area this was discussed with.)

(Boxes will expand and spill over onto next page to accommodate your typing.)

[2] http://faculty.pnw.edu/blog/curriculum-document-approval-procedures/

Document No:

Section III: PLAN OF STUDY REVISION

Degree Name: **B.S. Physical Sciences - Forensic Science Concentration**

Degree Requirements:

Credit Hours - 120 credit hours For example, students starting a 120 credit hour program in Fall 2017 must complete a minimum of 15 credit hours per semester/30 credit hours per academic year to earn a Bachelor's Degree on time in 4 years and graduate by May 2021.

Grade Point Average (GPA) - 2.0 GPA

Residency Rule - Complete at least 32 hours at the 30000 or higher course level at Purdue University Northwest

Experiential Learning (EL) - 2 courses approved with the EL attribute. EL courses are noted by (e) next to the course title.

PNW General Education Core

Core Categories	**Credits**	**Courses:** Enter "Select from list" or designate course(s) from list
English Composition	6	Select from list
Speech Communication	3	Select from List
Quantitative Reasoning	3	MA 16031 (OR MA 16300 Integrated Calculus Analysis Geometry I)
Natural Sciences	4	CHM 11500
Technology	3	Select from list
Humanities	3	PHIL 11100
Social Sciences	3	PSY 12000
Additional credits	3	Select from list
General Ed Elective	3	STAT 30100
First-Year Experience (FYE)	1	CHM 19400
Total (minimum)	32	

Other Required Courses

PSY 35000	3 credits
SOC 10000	3 credits
SCI 22000	2 credits
Free Electives*	6 credits
Restricted Elective **	3 credits
Total Other Required Courses	17 credits

* At least 3 credits of free electives must be 30000 level or higher. Students who choose to take MA 16300, MA 16400, PHYS 15200, and PHYS 25100 can reduce their free electives by five (5) credits to meet the 120 credit hour requirement.

** Restricted Elective – CHM (any course excluding 10000, 11100, 11200, and 19400), PHYS (any course 20000 or higher), or forensics oriented FIS courses. See program advisor for a list of available courses.

Core: Required Courses

BIOL 10100	4 credits
BIOL 10200	4 credits
BIOL 24400	4 credits
CHM 11600	4 credits
CHM 26505	3 credits
CHM 26300	1 credits
CHM 26605	3 credits
CHM 26400	1 credits
CHM 29400	1 credits
CHM 32100	4 credits
CHM 33300	3 credits
CHM 42400	4 credits
CHM 49400	1 credits
CHM 49800 (e)	2 credits
MA 16032 (OR MA 16400 Integrated Calculus Analysis Geometry II)	3 credits
PHYS 22000 (OR PHYS 15200 Mechanics)	4 credits
PHYS 22100 (OR PHYS 25100 Heat, Electricity, and Optics)	4 credits
Total Core	50 credits

Concentration

FIS 14000	3 credits
FIS 14005	3 credits
FIS 24500	3 credits
FIS 35000	3 credits
FIS 41000	3 credits
CRJU 15000	3 credits
CRJU/SOC 32400	3 credits
Total Concentration	21 credits

Total credits required for baccalaureate degree: _120___*

*****For degree programs that require an excess of 120 credit hours, provide explanation and attach documentation, if appropriate.

Section IV: For all Program Changes;
Current Semester by Semester

(Delete if new program)

See attached document (CES 17-XX REV CONCEN CHPY Current PoS.pdf) for further reference.

Semester One Total Credits = 14

Program Requirements : Designate Program Requirement	Subject Code/Course Number	(GenEd) Yes=X	Credits Number	Min Grade	Prerequisites
General Chemistry 1	CHM 11500	X	4	C-	MA 15300
Calculus 1 for Life Sciences	MA 16031 (Also allowed MA 16300 Integrated Calculus Analysis Geometry I)	X	3	C-	MA 15300 and MA 15400; or MA 15900; or ALEKS Placement 075
English Composition 1	Any Gen Ed approved English Composition	X	3		
Speech Communication	Any Gen Ed Speech Comm	X	3		
Freshman Experience	CHM 19400	X	1		

Semester Two Total Credits = 17

Program Requirements : Designate Program Requirement	Subject Code/Course Number	(GenEd) Yes=X	Credits Number	Min Grade	Prerequisites
General Chemistry 2	CHM 11600		4	C-	CHM 11500
Calculus 2 for Life Sciences (m)	MA 16032 (m) (Also allowed MA 16400 Integrated Calculus Analysis Geometry II)		3	C-	MA 16031 or MA 22300
English Composition 2	Any Gen Ed English Comp Course	X	3		
Intro to Forensic Science	SCI 14000		3	C-	

Program Requirements : Designate Program Requirement	Subject Code/Course Number	(GenEd) Yes=X	Credits Number	Min Grade	Prerequisites
General Physics	PHYS 22000 (Also allowed PHYS 152 Mechanics)		4	C-	MA14700 and MA14800; or, MA15300 and MA 15400

Semester Three Total Credits = 15

Program Requirements : Designate Program Requirement	Subject Code/Course Number	(GenEd) Yes=X	Credits Number	Min Grade	Prerequisites
General Physics	PHYS 22100 (Also allowed PHYS 25100 Heat, Electricity, and Optics. See note 1)		4	C-	PHYS 22000
Introductory Biology (m)	BIOL 10100		4	C-	MA 15300
Technology Elective	Any Gen Ed approved Technology course	X	3		
Organic Chemistry	CHM 26505		3	C-	CHM 11600
Organic Chemistry Lab	CHM 26300		1	C-	CHM 26505

Semester Four Total Credits = 13

Program Requirements : Designate Program Requirement	Subject Code/Course Number	(GenEd) Yes=X	Credits Number	Min Grade	Prerequisites
CES Elective	See Note 3		3	C-	
Sophomore Chemistry Seminar	CHM 29400		1	C-	CHM 26505
Health and Safety	SCI 22000		2	C-	CHM 11600
Organic Chemistry	CHM 26605		3	C-	CHM 26505
Organic Chemistry Lab	CHM 26400		1	C-	CHM 26300 and CHM 26605
Restricted Elective	See Note 2		3	C-	

Semester Five Total Credits = 16

Program Requirements : Designate Program Requirement	Subject Code/Course Number	(GenEd) Yes=X	Credits Number	Min Grade	Prerequisites
Introductory Biology	BIOL 10200		4	C-	MA 15300 or BIOL 10100
Intro to Criminal Justice System	CRJU 15000		3		
Free Elective	Choose Any Elective		3		
Elementary Psychology	PSY 12000	X	3		
Elementary Statistical Methods	STAT 30100		3		MA 14700 or MA 15200 or MA 15300 or MA 21300

Semester Six Total Credits = 15

Program Requirements : Designate Program Requirement	Subject Code/Course Number	(GenEd) Yes=X	Credits Number	Min Grade	Prerequisites
Restricted Elective	See Note 2		3	C-	
Restricted Elective	See Note 2		3	C-	
Restricted Elective	See Note 2		3	C-	
Biochemistry	CHM 33300		3	C-	CHM 26505 or CHM 25500; and CHM 26605 or CHM 25600
Abnormal Psychology	PSY 35000		3		

Semester Seven Total Credits = 15

Program Requirements : Designate Program Requirement	Subject Code/Course Number	(GenEd) Yes=X	Credits Number	Min Grade	Prerequisites
Analytical Chemistry I	CHM 32100		4	C-	CHM 11600
Research in Chemistry (e)	CHM 49800 (e)		1	C-	Min of 75 SCH (Junior Classification)
Genetics	BIOL 24400		4	C-	BIOL 10100, 10200 & CHM 11600
Free Elective	Any Elective		3		
Ethics	PHIL 11100	X	3		

Semester Eight Total Credits = 15

Program Requirements : Designate Program Requirement	Subject Code/Course Number	(GenEd) Yes=X	Credits Number	Min Grade	Prerequisites
Junior-Senior Chemistry Seminar	CHM 49400		1	C-	CHM 29400 and CHM 49800
Research In Chemistry (e)	CHM 49800 (e)		1	C-	Min of 75 SCH (Junior Classification)
Analytical Chemistry II	CHM 42400		4	C-	CHM 32100
Free Elective	Any Elective		3		
Gen Ed Elective	Any Gen Ed approved course	X	3		
Criminology	CRJU 32400		3		

Notes:

Upper division chemistry and physics courses are offered on a two year rotation. Contact an advisor to determine the specific semester a particular course will be offered. Any individual course within CES must be a C- or better, but the avg. G.P.A. for all disciplinary courses (CHM or PHYS courses) must be at least 2.50. At least 3 credit hours of Free Electives must be 30000 level or higher.

Note 1: Students who choose to take MA 16300, MA 16400, PHYS 15200, and PHYS 25100 can reduce their free electives by five (5) credits to meet the 120 credit hour requirement.

Note 2: Restrictive Elective – CHM (any course excluding 10000, 11100, 11200, and 19400), PHYS (any course 20000 or higher), or forensics oriented SCI course. See program advisor for a list of available courses.

Note 3: CES Elective: ASTR (any course); BIOL (any course excluding 10008, 10010, and 10700); CHM (any course 20000 or higher); CE (any course); CS (any course excluding 10000); EAS (any course): ECE (any course): ENGR (any course excluding 11000, 18600); FIS (any course); MSE (any course); MA (any course 20000 or higher excluding 23700, 23800, and 23900); ME (any course); PHYS (any course 20000 or higher); SCI (any course from the following: SCI 10601, 12200, 13100, 14000, 15000, 20200, and 22000); and STAT (any course 20000 or higher).

Section IV continued: For all Program Changes;
Proposed Semester by Semester

See attached document (CES 17-XX REV CONCEN CHPY Proposed PoS.xls) for further reference.

Semester One Total Credits = 14

Program Requirements : Designate Program Requirement	Subject Code/Course Number	(GenEd) Yes=X	Credits Number	Min Grade	Prerequisites
General Chemistry 1	CHM 11500	X	4	C-	MA 15300
Calculus 1 for Life Sciences	MA 16031 (Also allowed MA 16300 Integrated Calculus Analysis Geometry I. See note 1)	X	3	C-	MA 15300 and MA 15400; or MA 15900; or ALEKS Placement 075
English Composition 1	Any Gen Ed approved English Composition	X	3		
Intro to Forensic Science: Criminalistics	FIS 14000		3	C-	
Freshman Experience	CHM 19400	X	1		

Semester Two Total Credits = 17

Program Requirements : Designate Program Requirement	Subject Code/Course Number	(GenEd) Yes=X	Credits Number	Min Grade	Prerequisites
General Chemistry 2	CHM 11600		4	C-	CHM 11500
Calculus 2 for Life Sciences (m)	MA 16032 (Also allowed MA 16400 Integrated Calculus Analysis Geometry II. See note 1)		3	C-	MA 16031 or MA 22300
English Composition 2	Any Gen Ed English Comp Course	X	3		

Program Requirements : Designate Program Requirement	Subject Code/Course Number	(GenEd) Yes=X	Credits Number	Min Grade	Prerequisites
Intro to Forensic Science: Evidence Handling	FIS 14005		3	C-	
Introductory Biology (m)	BIOL 10100		4	C-	MA 15300

Semester Three Total Credits = 14

Program Requirements : Designate Program Requirement	Subject Code/Course Number	(GenEd) Yes=X	Credits Number	Min Grade	Prerequisites
Introductory Biology	BIOL 10200		4	C-	MA 15300 or BIOL 10100
Ethics	PHIL 11100	X	3		
Introductory Sociology	SOC 10000		3	C-	
Organic Chemistry	CHM 26505		3	C-	CHM 11600
Organic Chemistry Lab	CHM 26300		1	C-	Co-requisite: CHM 26505

Semester Four Total Credits = 15

Program Requirements : Designate Program Requirement	Subject Code/Course Number	(GenEd) Yes=X	Credits Number	Min Grade	Prerequisites
General Physics	PHYS 22000 (Also allowed PHYS 152 Mechanics. See note 1)		4	C-	MA14700 and MA14800; or, MA15300 and MA 15400
Sophomore Chemistry Seminar	CHM 29400		1	C-	CHM 26505
Intro to Criminal Justice System	CRJU 15000		3		
Organic Chemistry	CHM 26605		3	C-	CHM 26505
Organic Chemistry Lab	CHM 26400		1	C-	CHM 26300 and Co-requisite: CHM 26605
Laboratory Quality Systems Theory	FIS 24500		3	C-	

Semester Five Total Credits = 15

Program Requirements : Designate Program Requirement	Subject Code/Course Number	(GenEd) Yes=X	Credits Number	Min Grade	Prerequisites
General Physics	PHYS 22100 (Also allowed PHYS 25100 Heat, Electricity, and Optics. See note 1)		4	C-	PHYS 22000
Speech Communication	Any Gen Ed Approved Speech Comm	X	3		
Health and Safety	SCI 22000		2	C-	CHM 11600
Elementary Psychology	PSY 12000	X	3		
Elementary Statistical Methods	STAT 30100	X	3	C-	MA 14700 or MA 15200 or MA 15300 or MA 21300

Semester Six Total Credits = 15

Program Requirements : Designate Program Requirement	Subject Code/Course Number	(GenEd) Yes=X	Credits Number	Min Grade	Prerequisites
Free Elective	Choose Any Elective		3	C-	
Restricted Elective	See Note 2		3	C-	
Courtroom Demeanor	FIS 35000		3	C-	
Biochemistry	CHM 33300		3	C-	CHM 26505 or CHM 25500; and CHM 26605 or CHM 25600
Abnormal Psychology	PSY 35000		3		PSY 12000

Semester Seven Total Credits = 15

Program Requirements : Designate Program Requirement	Subject Code/Course Number	(GenEd) Yes=X	Credits Number	Min Grade	Prerequisites
Analytical Chemistry I	CHM 32100		4	C-	CHM 11600
Research in Chemistry (e)	CHM 49800		1	C-	Min of 75 SCH (Junior Classification)
Genetics	BIOL 24400		4	C-	BIOL 10100, 10200 and CHM 11600
Professional Practice in Forensic Science	FIS 41000		3	C-	
Technology Elective	Any Gen Ed approved Technology course	X	3		

Semester Eight Total Credits = 15

Program Requirements : Designate Program Requirement	Subject Code/Course Number	(GenEd) Yes=X	Credits Number	Min Grade	Prerequisites
Junior-Senior Chemistry Seminar	CHM 49400		1	C-	CHM 29400 and Co-requisite: CHM 49800
Research In Chemistry	CHM 49800		1	C-	Min of 75 SCH (Junior Classification)
Analytical Chemistry II	CHM 42400		4	C-	CHM 32100
Free Elective	Any Elective		3		
General Education Elective	Any Gen Ed approved course	X	3		
Criminology	CRJU/SOC 32400		3		SOC 10000

Notes:

Upper division chemistry and physics courses are offered on a two year rotation. Contact an advisor to determine the specific semester a particular course will be offered. Any individual course within CES must be a C- or better, but the avg. G.P.A. for all disciplinary courses (CHM or PHYS courses) must be at least 2.50. At least 3 credit hours of Free Electives must be 30000 level or higher.

Note 1: Students who choose to take MA 16300, MA 16400, PHYS 15200, and PHYS 25100 can reduce their free electives by five (5) credits to meet the 120 credit hour requirement.

Note 2: Restrictive Elective – CHM (any course excluding 10000, 10300, 10600, 11100, 11200, and 19400), PHYS (any course 20000 or higher), or forensics oriented FIS course. See program advisor for a list of available courses.