Division of Academic and Student Affairs
Courses & Curricula & Academic Standards
oucc.dasa.ncsu.edu
courses-curricula@ncsu.edu

Campus Box 7105
211A Park Shops
Raleigh, NC 27695-7105
P: 919.515.9769

University Courses & Curricula Committee 2019-2020

October 23, 2019
Talley Student Union 5101
12:45pm-2:45pm

Call to Order 12:45pm

- Welcome from Chair Elect Wendy Krause
- Remarks and Updates from OUCCAS/DASA
- Approval of UCCC October 9th 2019 Minutes
- Course and Curricular Business

Old Business

Old Business			
Presenter	**Reviewers**	**Action**	**Type**
Merrill	Schaffer, Reynolds, Hessling	*CS 418/(518) Introduction to Regulatory Science in Agriculture	Revisions: SLOs, description, grading, eval methods, title. Returning from Jan 9 and March 27, 2019 Meetings

New Business

Consent Agenda		
Action	**Type**	**Notes**
*BCH 452 Introductory Biochemistry Laboratory	Minor	Revisions: Requisites
*BIO 488/(588) Neurobiology	Minor	Revisions: Requisites, description
*HESM 300 Practicum in Health	Minor	Revisions: Description
*HESM 301 Coaching Practicum	Minor	Revisions: Description
*HESM 302 Practicum Experience in Outdoor Programs	Minor	Revisions: Description
*HESM 303 Sports Science Practicum	Minor	Revisions: Description
*HESM 304 Dance Practicum	Minor	Revisions: Description
*NR 219 Natural Resource Markets	Minor	Revisions: Title
*MUS 105 Introduction to Music in Western Society	Minor	Revisions: Prefix
*MUS 190 Preparatory Applied Music Lessons	Minor	Revisions: Instructor, repeats
*TMS 211 Introduction to Fiber Science	Minor	Revisions: Description, GEP review
*TT 305 Introduction to Nonwoven Products and Processes	Minor	Revisions: Requisites
*TT 331 Performance Evaluation of Textile Materials	Minor	Revisions: Requisites
*TT 407 Characterization Methods in Nonwovens	Minor	Revisions: Requisites
*USC 116 Introduction to Sustainability for EcoVillage	Minor	Revisions: Term Offering
Furniture Manufacturing Minor (14FUM)	Drop	Minor being Dropped

Poole College of Management			
Presenter	**Reviewers**	**Action**	**Type**
Kuzenski	Marshall, Simpson, Driscoll	BUS 476 Decision Modeling and Analysis	New Course

College of Engineering			
Presenter	**Reviewers**	**Action**	**Type**
Reynolds	Muse, Driscoll, Shin	14BMHBS Biomedical & Health Sciences	Revisions
Marshall	Kuzenski, Gruehn, Domingue	Supply Chain Engineering	New Minor

College of Design			
Presenter	**Reviewers**	**Action**	**Type**
Schaffer	Reynolds, Carlson Welch, Krause	Art and Design (Bachelor)	Revisions
Schaffer	Marshall, Rucker, Fitzpatrick	Landscape Architecture Minor (12LND)	Revisions

College of Agriculture and Life Sciences			
Presenter	**Reviewers**	**Action**	**Type**
Bruce	Driscoll, Muse, Shin	*BAE 486/(586) Aquacultural Engineering	New Course

College of Sciences			
Presenter	**Reviewers**	**Action**	**Type**
Klesath	Reynolds, Bruce, Gruehn	*PY 123 Stellar and Galactic Astronomy	Revisions: SLOs, eval methods
Muse	Merrill, Bruce, Hessling	*PY 212 College Physics II	Revisions: SLOs, eval methods

College of Natural Resources			
Presenter	**Reviewers**	**Action**	**Type**
Roise	Rucker, Muse, Driscoll	Environmental Education	New Minor

University College			
Presenter	**Reviewers**	**Action**	**Type**
Carlson Welch	Roise, Marshall, Merrill	*HESM 395 Special Topics in Health and Exercise Studies	Revisions: Title, number, description, SLOs, term offering
Carlson Welch	Schaffer, Hessling, Kuzenski	*HON 341 Time Travel	Revisions
Domingue	Gruehn, Simpson, Muse	*HON 348 Emotion and Reason	New Course
Domingue	Rucker, Fitzpatrick, Roise	*HON 360 Music and Oppression	New Course

SLO= Student Learning Outcomes

***=Course Action Initiated Before October 1, 2019**

Discussion:

Notes:

- All linked course actions are viewable in CIM.
- To view actions, please click on the hyperlink. You may need to use your Unity ID to log in.
- If you experience issues logging in, please go to https://next-catalog.ncsu.edu/courseadmin/ and type the course prefix and number into the search bar.

SLO = Student Learning Outcomes

Division of Academic and Student Affairs
Office of Undergraduate Courses & Curricula
oucc.dasa.ncsu.edu
courses-curricula@ncsu.edu

Campus Box 7105
211A Park Shops
Raleigh, NC 27695-7105
P: 919.515.9769

University Courses and Curricula Committee

October 9, 2019
Talley Student Union 5101
Call to Order : 12:45 pm

Members Present: Chair Rudi Seracino, Marta Klesath(past chair), Kanton Reynolds, Melissa Merrill, Daniel Gruehn, Catherine Driscoll, Peter Hessling, Wendy Krause, Rucker Rob, Jackie Bruce, Annie Carlson Welch, John Kuzenski, Joseph Roise, Kristen Schaffer, Chloe Shin, Spencer Muse, Lisa Marshall

Members Absent: Melissa Merrill, Peggy Domingue, Coleman Simpson

Guests: Rob Wade, Andy Hale, Casie Fedukovich, Jason Swarts

Ex-Officio Members Present: Li Marcus, Lexi Hergeth, John Harrington, Tim Petty, Jordan Luzader, Kyle Pysher

WELCOME AND INTRODUCTIONS

- **Remarks from Chair** - Welcomed the committee members and introduced the guests and proxies. Chair also thanked the committee for their participation in the past meetings electronically hosted meeting.
- **Remarks from OUCCAS/DASA-**
- **Approval of the Minutes from September 25th 2019** – *Approved Unanimously*
    - Discussion: Member Jackie Bruce moved to approve.

NEW BUSINESS

- **ANS 303 Principles of Equine Evaluation** - *Approved Unanimously*
  Discussion: Member Jennette Moore presented the new course action and indicated the updated syllabus is in CIM and adjustments have been made based on the feedback.

- **BCH 454 Advanced Biochemistry Laboratory** - *Approved Unanimously*
  Discussion: Member Jackie Bruce presented the new course action. Registration and Records confirmed the requisites are clear.

NEW BUSINESS

- **Consent Agenda** -*Approved Unanimously*
  Discussion: Member moved to approve.

- **PY 124 Solar System Astronomy** - *Approved Pending with Suggestion*
  Discussion: Member Marta Klesath presented the new course action. Member asked if the cost of the textbook in the syllabus indicating that the cost of the textbook just says "varies" and should have a numerical range. Member motioned to amend the motion from approved to approve pending the inclusion of a range of numerical cost in the syllabus. Member brought attention to a typo in the grading table "recieve" to "receive"
- Member asked a question about when the committee should continue to review the syllabus and how the October 1st standpoint.

- **BCH 351 General Biochemistry**- *Approved Pending with Suggestion*
  Discussion: Member Jeannette Moore presented the course action. Member brought attention to the prerequisites indicating "strongly recommended but not required" which cannot be coded. Member moved to amend the motion to approved pending the information is moved from the requisites field. Members and XONV members indicated the effective date needs to be changed to Fall 2020 instead of Fall 2019. Member asked if the 120 credit hour mandate will be affected by this course being a required action. Member asked if they could submit the affected curricula as a memo including all curricula, Lexi responded yes, as long as they are only removing 1 free elective hour to make room for the additional credit hour.
  Members commented they believe the curricula required field should remain.
  Members believe programs not wanting to accommodate an additional credit hour for this course could remove BCH 351 from their program.
  Member brought attention to the syllabus in the electronically hosted course components section. The first statement is there, but additional language has been added, Lexi confirmed this is acceptable by OUCCAS state point.

- **BAET Course Prefix**- *Approved Unanimously*
  Discussion: Member Jeannette Moore presented the course action and introduced guest Andy Hale. XONV member

asked if curricula will be affected, guest responded yes, but they are waiting for the new prefix to be approved before submitted those actions. Guest confirmed the name was changed last year, now they are changing the prefix, then in the future they will change the curricula. Member asked if Bio-Ag is a curricula, guest responded that there are multiple programs with Bio-Ag focuses.

- **ENG 202 Interdisciplinary Perspectives in Writing -**

- **ENG 203 Interdisciplinary Perspectives in Writing LAB-** *Tabled*
  Discussion: Member Daniel Gruehn presented both course actions and introduced guests Casie Fedukovich. Member brought attention to the issue of two courses have one grade asking why there is one course with a lab. Casie explained that it is more confusing to make these two courses one course, explaining that by splitting into a 2 and a 1 credit hour courses gives the freedom to have a 2 credit hour IP course and indicated the grade won't be separated. Guest Jason Swarts explained that on the degree audit the courses are in two different places. These courses can't be taken separately and are co-requisites of each other. Guests indicated this is helpful for transfer students.
  XONV member asked if the ENG 202 course would potentially have a 2 credit hour course but if 3 credit hours are required in IP, would there be a wave for the third IP hour, response is no.
  Member indicated they don't support the lab and lecture being separated because it is different from a chemistry lab that. Members discussed trying to separate the grading from 202 and 203 so that 203 has separate assignments that could make it so that the lab would have a separate grade.
  If a transfer student comes in they can enroll in ENG 101, the transfer students are usually transferring in 3 credits or. ENG 105 didn't meet pedological expectations and the fail rate is 3 times what ENG 101 in an assessment and they need to have experience that isn't ENG 105 before entering into other writing courses. Although 105 maybe more efficient but is better for the students in the long run.
  Members discussed how the transfer credits work for all community college transfers are all ENG 1** coming in as 3 credits of first year writing (ENG 1**).
  Member brought attention to the syllabus on page 5 indicating that the grade from ENG 202 and 203 will be averaged to provide a single grade for both courses. Member indicated there is a way to have the two separate grades already, this issue being discussed is if a student passed one and failed the other, would the student be able to pass the failed course again. Guests indicated they do not wish for students to be able to take one of the courses independent of the other. Examples of chemistry courses with labs are one course with one lab section offerings. Members also discussed Accounting lectures and labs as well.
  Members discussed how to take the course for one grade, presenter asked if the course was combined to have 3 credit hours of IP, guest indicated this would make additional work for advisors and students, specifically transfer students.
  Member asked why the ENG 101 into to writing course is 4 credit hours and not 3, guest indicated this went down from 6 credit hours to 4 and that it's not feasible to have less credit hours.
  Chair indicating the motion on the table is still to approve.
  Member had a comment on why ENG 203 has 25% participation and has vague information on how it's weighted and why ENG 202 having 10% participation appears to have more information about how that 10% would be evaluated. Guest indicated there is a discrepancy between the two because there will be no direct instruction from the instructor at the lab. Members indicated that the 25% participation should have additional information to explain how the participation will be graded.
  Members discussed if this could be amended to tabled or pending based on the removal of the first paragraph in order to separate the grades for the two courses. Chair indicated if there are two separate grades for the two courses, how would a student passing one and not the other be handled.
  Motion to amend the motion from approved to tabled. Motion approved with one abstention from Daniel Gruehn.
  Presenter asked who the relevant parties would be to solve this other than UCCC, members indicated they will speak with the English department to help with this.

- **ENG 380 Modern Drama-** *Approved Unanimously*
  Discussion: Member Catherine Driscoll presented the course action. Reviewers indicated they found nothing wrong with the course.

- **T 104 Fabric of Success and Career Readiness-** *Approved Pending with Suggestions*
  Discussion: Member Wendy Krause presented the course action. Reviewer indicated the syllabus has no catalog description and is missing the required statements including office hours. In CIM the assignments don't match the syllabus.
  Pending would include the catalog description being copied into the syllabus, correcting the grade GPA link, including office hours, and in CIM the requisites say this course is for student in the program taking 15+ hours but in the syllabus it says 30+ hours. Members suggested defining what Late means in terms of how late is late.
  Member indicated in CIM the learning outcomes in the syllabus and in CIM the preamble "students will be able to" and if that needs to match. Chair indicated this is alright as long as the bulleted outcomes match, and they do.

Motion to amend the motion to approved pending, motion passed.

Discussion:

Meeting adjourned at 2:47 pm

Respectfully submitted by Lexi Hergeth

EDWARD P. FITTS DEPARTMENT OF
INDUSTRIAL AND SYSTEMS ENGINEERING
www.ise.ncsu.edu

NC STATE UNIVERSITY

Campus Box 7906
111 Lampe Drive, Daniels Hall, Room 441B
Raleigh, NC 27695-7906
919.515.2362

Curriculum Action Memorandum

Removing an Option to a Curriculum

To: University Courses and Curriculum Committee
From: Edward P. Fitts Department of Industrial & Systems Engineering
College of Engineering

Affected Plans:
Furniture Manufacturing Minor (14FUM)

Revisions:
Removal of the Furniture Manufacturing Minor

We are requesting to remove the Furniture Manufacturing Minor from the University Undergraduate Programs listing.

Justification:
The last student completed this Minor in Spring 2014. The last instructor with expertise in this area retired from the university in December 2017. The Edward P. Fitts Department of Industrial and Systems Engineering no longer considers this functional area to be a focus for the department and does not intend to staff for it in the future.

Impact to the programs:
There is no foreseeable impact to other departments. This is the removal of a minor that is no longer considered a strategic area of emphasis for the department.

Proposed effective date for revision:
Fall 2019 - 2198

SIGNATURE PAGE

CURRICULUM ACTION FOR 14FUM

RECOMMENDED By:

Julie L. Shaw — 9/12/19

HEAD, DEPARTMENT/ PROGRAM — DATE

ENDORSED By:

[signature] — 26 Sept 19

CHAIR, COLLEGE COURSE & CURRICULA COMMITTEE — DATE

Jerome P. Lavelle — 9/27/19

COLLEGE DEAN — DATE

APPROVED By:

CHAIR, UNIVERSITY COURSES & CURRICULA COMMITTEE — DATE

CHAIR, COUNCIL ON UNDERGRADUATE EDUCATION — DATE

DEAN, DIVISION OF ACADEMIC AND STUDENT AFFAIRS (DASA) — DATE

APPROVED EFFECTIVE DATE_____

North Carolina State University is a land-grant university and a constituent institution of the University of North Carolina

NC STATE UNIVERSITY

Department of
Biomedical and Health Sciences
Engineering

Campus Box 7115
Engineering Building III
Raleigh, NC 27695-7905

September 18, 2019

To: Dr. Mike Mullen
Vice Chancellor and Dean of DASA (Division of Academic and Student Affairs)

From: Nancy Allbritton, Head, Biomedical and Health Sciences Engineering

Subject: Minor change to curriculum

By means of this memorandum, the Department of Biomedical and Health Sciences Engineering proposes to make a minor change to the 8-semester display for the undergraduate curriculum. The change is shown in the attached marked up curricula.

Justification: Biomedical and Health Sciences Engineering would like to require PHI 325 Biomedical Ethics for 3 credit hours of Interdisciplinary Perspectives to satisfy the student outcome on ethics education in the engineering accreditation criteria.

ENDORSED BY:

Department Head, Biomedical Engineering — 9/19/19 Date

Chair, COE Courses & Curricula Committee — 26 Sept 19 Date

Jerome P. Fawelle — 9/27/19

College of Engineering Dean — Date

Chair, University Courses & Curricula Committee — Date

Chair, Dean of Undergraduate Academic Programs — Date

APPROVED:

Provost's Office — Date

FRESHMAN YEAR							
FALL SEMESTER			CREDITS	SPRING SEMESTER			CREDITS
CH	101	Chemistry, A Molecular Science[1,2]	3	CH	201	Chemistry: A Quantitative Science	3
CH	102	General Chemistry Lab[1,2]	1	CH	202	Quantitative Chemistry Lab	1
E	101	Introduction to Engr & Prob Solv[1,2]	1 (CP)	MA	241	Calculus II[1,2]	4 (CP)
E	115	Intro to Computing Environ[1,2]	1 (CP)	PY	205	Physics for Engr & Sc I[1,2]	3 (CP)
ENG	101	Academic Writing and Research[1,3]	4 (CP)	PY	206	Physics for Engr & Sc I Lab[1,2]	1 (CP)
MA	141	Calculus I[1,2]	4 (CP)	E	102	Engineering in the 21st Century	2
HESF	1**	Fitness and Wellness Course[E]	1	EC	205	Fund of Econ[D] (or EC 201 or ARE 201)	3
			*Total:*15				*Total:*17
SOPHOMORE YEAR							
FALL SEMESTER			CREDITS	SPRING SEMESTER			CREDITS
BME/BMME[4,5]	201	Comp Meth in BME	3 (CP)	BIO	183	Intro Biol: Cellular & Molecular	4
BME/BMME[4,5]	209	Introduction to the Materials Science of Biomaterials	4 (CP)	BME/BMME[4,5]	205	Intro to Biomedical Mechanics	4 (CP)
BME/BMME[4,5]	298	BME Design and Manufacturing 1	2 (CP)	BME/BMME[4,5]	207	Biomedical Electronics	4 (CP)
MA	242	Calculus III	4	CH	221	Organic Chem I	3
PY	208	Physics for Engr & Sc II	3 (CP)	CH	222	Organic Chem I Lab	1
PY	209	Physics for Engr & Sc II Lab	1 (CP)				
			Total:17				*Total:*16
JUNIOR YEAR							
FALL SEMESTER			CREDITS	SPRING SEMESTER			CREDITS
BME/BMME[4]	301	Human Physiology: Electrical Analysis	4	BME/BMME[4]	302	Human Physiology: Mechanical Analysis	4
MA	341	Applied Diff Equations ***or***	3	BME/BMME[4,6]	3*5	BME Gateway 2	3
MA	331	Differential Equations for the Life Sciences		BME/BMME[4,6]	3*5	BME Gateway 3	3
				BME/BMME[4,5]	398	BME Design and Manufacturing II	2
BME/BMME[4,6]	3*5	BME Gateway 1	3				
***	***	Engineering Elective[7]	3	***	***	GEP Requirement*	3
PHI	325	Bio-Medical Ethics*	3				
			Total:16				*Total:*15
SENIOR YEAR							
FALL SEMESTER			CREDITS	SPRING SEMESTER			CREDITS
BME	451	BME Senior Design I ***or***	*3*	BME	452	BME Senior Design II ***or***	*3*
BMME	697	BME Senior Design I		BMME	698	BME Senior Design II	
		BME Specialty Elective 1[8]	*3*			BME Specialty Elective 3[8]	*3*
		BME Specialty Elective 2[8]	*3*			BME Specialty Elective 4[8]	*3*
***	***	GEP Requirement*	*3*	***	***	GEP Requirement*	*3*
***	***	GEP Requirement*	*3*	HESF	***	Physical Education / Healthy Living*	*1*
			Total:15				*Total:13*
Minimum Credit Hours Required for Graduation[*I,J,K]: 124							

Major/Program Footnotes:

[1]Required course for admission to the program
[2]Grade of C or higher required
[3]Grade of C- or higher required
[4]BME/BMME indicates the class is taught BME XXX on the NC State campus in the semester shown and as BMME XXX on the UNC campus and the alternate semester.
[5]Additional options available on the degree audit for students with credit from the previous curriculum, transfer credit, double majors, study abroad credit or similar experience.
[6]Take three gateway electives to meet the pre-requisites for 2 specialization areas
[7]Any 300 or greater level engineering course
[8]Take four Specialty Electives from no more than two specialization areas

A. .

CURRICULUM REQUIREMENTS

Degree Title: Bachelor of Science in Biomedical Engineering
Current Degree Key: 14BME188
Effective Date of Revision: 8/01/2018

MAJOR FIELD OF STUDY REQUIREMENTS:		
Required Courses/Groups/ Electives:	***Credit Hours***	***GEP category, if applicable***
Indicate if course or course groupings have a C-wall or MGPA requirement		**List GEP category and hours satisfied by a Major requirement**
Math		
MA 141 (C)-wall, MA 241 (C)-wall, MA 242, MA 341	15	Mathematics (6 hours)
Sciences		
CH 101 (C)-wall, CH 102 (C)-wall, CH 201, CH 202, CH 221, CH222	12 12	Natural Sciences (4 hours) Natural Sciences (4 hours)
PY 205 (C)-wall, PY 208, BIO 183		
BME Major	3	
BME 201	4	
BME 205	4	
BME 207	4	
BME 209	2	
BME 298	4	
BME 301	4	
BME 302	2	
BME 398	3	
BME 451	3	
BME 452	3	
PHI 325	3	
GRP 020 BME 3x5 Gateway Electives (Pick 3 from two groups) **GRP 021** (BME 315, BME 325), **GRP 022** (BME 335, BME 345), **GRP 023** (BME 345, BME 355), **GRP 024** (BME 385, BME 365), **GRP 025** (BME 365, BME 375)	9 12	
GRP 030 BME 4xx Elective (Pick 4 from two groups) **GRP 031** (BME415, BME417, BME419, BME421, MAE 308), **GRP 032** (BME426, BME437, BME467, BME483, BME484, BME424), **GRP 033** (BME412, BME461, BME463, BME475), **GRP 034** (BME443, BME405, BME418, BME445, BME425, BME447), **GRP 035** (BME551, BME522, BME552, BME536, BME412, BME475)	 3	
GRP 040 Engineering Elective (Pick 1) **GRP 020, GRP 030**		

Concentration Courses/Groups/Electives:		
Free Electives:		
Total credit hours under Major Field of Study: ***Minimum 27 hours required in program area.***	102 hours	
COLLEGE REQUIREMENTS:		
Orientation Course(s): **E 101** (C-)-wall **and E 115** (C-)-wall	2	E115 satisfies Technology Fluency requirement
Other: **(ex: Adv Communication courses)** Economics Elective (EC 205, 201; ARE 201) E 102 Engineering in the 21st century	3 2	Social Science Interdisciplinary Perspectives
Total credit hours under College Requirements:	7 hours	

NCSU GENERAL EDUCATION PROGRAM REQUIREMENTS

Courses in the Major and/or Minor may also fulfill a General Education requirement; however, a GEP category may not be subset to require a specific course from the category list. Required courses must be listed in the Major/College requirements.

Specific courses should not be listed in any of the fields below other than ENG 101.

At least one of the following must be listed:

[1]Choose course(s) from the University Approved GEP course list for this category.
[2]Minimum requirements are satisfied by Major/College course requirements.
[3] Major/College course requirement satisfies **X** credit hrs of this requirement. Remaining hours required must be chosen from the University Approved GEP course list for the category.
[4]Co-requisite is satisfied by a Major/College course requirement.
[5] Choose course(s) from the University Approved GEP course lists for the Humanities, Social Sciences, or Visual & Performing Arts.
[6] Choose course(s) from the University Approved GEP course lists for the Natural and Mathematical Sciences.

General Education Program Requirements: *Minimum 39-40 hrs*	*Credit hours*	*How will the GEP requirement be met?* ***(choose applicable statement from 1-6 listed above)***
Mathematical Sciences *(minimum of 6 credits)* (at least one with *MA or ST* prefix) ***Course(s) in the Major may double-count to satisfy this requirement and also satisfy both the Global Knowledge and Diversity co-requisites.***	X	*Minimum requirements are satisfied by Major course requirements*
Natural Sciences *(minimum of 7 credits)* (at least *1 laboratory*) ***Course(s) in the Major may double-count to satisfy this requirement and also satisfy both the Global Knowledge and Diversity co-requisites.***	X	*Minimum requirements are satisfied by Major course requirements*
English 101	4	ENG 101 (C-)-wall
Humanities *(minimum of 6 credits)* (from two different disciplines) ***Course(s) in the Major may double-count to satisfy this requirement and also satisfy both the Global Knowledge and Diversity co-requisites.***	6	*Choose course(s) from the University Approved GEP course list for this category*
Social Sciences *(minimum of 6 credits)* (from two different disciplines) ***Course(s) in the Major may double-count to satisfy this requirement and also satisfy both the Global Knowledge and Diversity co-requisites.***	3	*Required College course satisfies 3 credit hrs of this requirement. Remaining hours required must be chosen from the University Approved GEP course list for the category.*
Additional Breadth *(minimum of 3 credits)* (Choose AB course list that is different from the approach of the Major) ***Major/College requirements cannot satisfy this requirement and an AB course cannot be double-counted except in satisfying the Global Knowledge and Diversity co-requisites.***	3	*Choose course(s) from the University Approved GEP course lists for the Humanities, Social Sciences or Visual and Performing Arts*
Interdisciplinary Perspective *(minimum of 5-6 credits)* ***Only course(s) in the Major may double-count to satisfy this requirement.***	0	*Required College course satisfies 2 credit hours of this requirement. Remaining 3 credit hours are satisfied by the required course in ethics.*
Health Exercise Sciences (including one Fitness course)	2	*Choose course(s) from the University Approved GEP course list for this category*

Total credit hours needed to complete GEP that are <u>not</u> satisfied as part of the Major/College requirements.	15 hours	
GEP Co-Requisites:		***Courses taken in the Major, GEP, or Minor may double-count to fulfill the co-requisites. Courses that satisfy the U.S. Diversity* or Global Knowledge** co-requisite are marked on course lists with asterisks as indicated.***
U.S. Diversity co-requisite*	n/a	*Choose course(s) from the University Approved GEP course list for this category*
Global Knowledge co-requisite**	n/a	*Choose course(s) from the University Approved GEP course list for this category*
Foreign Language Proficiency	n/a	FL_102
The following requirements must be satisfied within the College/Program:		
Advanced Communication	X	Satisfied by College/Program Requirements
Technology Fluency	X	Satisfied by College/Program Requirements

Total credit hours required to complete Degree: **Total must be within 120-128 credit hours.**	124	**As applicable, indicate here the overall GPA requirement for degree completion including course completion.**

From: Michael Pendlebury
Sent: Wednesday, September 25, 2019 1:55 PM
To: Hatice Orun Ozturk
Cc: Jeff Braden; Austin, David F.; Driscoll, Catherine
Subject: Re: PHI 325 - Minor Action Package

Hatice,

Dean Braden has assured me that my department will have the resources needed to offer two extra sections of this course if your action is approved. So you can now go ahead and submit it.

Best,

Michael

Michael Pendlebury
Professor of Philosophy and Department Head
Philosophy and Religious Studies
North Carolina State University

On 9/23/2019 2:15 PM, Hatice Orun Ozturk wrote:
Michael,

I prepared the minor action documents to add PHI 325 to BME Curriculum and it is attached.
We will wait for the approval of resources before we submit it to the College and University Curriculum Committees.

Thank you for your assistance.

Hatice

NORTH CAROLINA STATE UNIVERSITY
UNDERGRADUATE CURRICULUM ACTION FORM
Academic Minor

DEPARTMENT(S):

Edward P. Fitts Department of Industrial & Systems Engineering

Department of Business Administration

TYPE OF PROPOSAL:

New Minor: _X__

TITLE OF THE MINOR:

_Supply Chain Engineering

Revision to Minor: ____

Discontinuation: ____

PROPOSED EFFECTIVE DATE: __Fall 2019_____ APPROVED EFFECTIVE DATE: _____

ATTACHMENTS INCLUDED:

1. Statement of Justification
2. Statement of Academic Minor Program Objectives
3. List of Courses constituting the Proposed Minor
4. Catalog Description of Proposed Minor
5. Administration of the Minor (Contact information for Administrator of the Minor)
6. Requirements for Admission and Completion of the Minor
7. Statement on Other Departments Likely to be Affected and Summary of Consultations with those Departments
8. *Optional*: Projected Resources and Enrollment

REQUIRED SIGNATURES:

9/27/19
Head, Department/Program Date

30 Sept 19
Chair, College Curriculum Committee Date

Jerome P. Lavelle 9/30/19
College Dean Date

Chair, University Courses & Curricula Committee Date

Dean, Division of Academic and Student Affairs (DASA) Date

OTHER REQUIRED SIGNATURES AS NEEDED:

Chair, College Curriculum Committee Date

College Dean Date

Statement of Justification

Engineering students are desirous of additional opportunities to expand their scope and gain additional skill sets to complement their technical backgrounds. In fact, Business Administration is the second most popular academic minor for ISE students behind Statistics. In addition, many ISE graduates obtain employment in job functions that are related to or inherently require supply chain knowledge and capabilities. Quantitatively focused Supply Chain students are interested in additional opportunities to supplement the core Supply Chain curriculum with knowledge of the ISE aspects of the field. This interest from Business Administration students and others in learning analytic methods of exploring problems associated with this field of inquiry is an opportunity for the two academic units to formalize a relationship and proposed curriculum around this emerging topic with insight and knowledge from their home disciplinary areas.

Poole College of Management (PCoM) already provides the largest base of students that minor in Industrial Engineering and many College of Engineering (COE) Engineering students, especially those in ISE migrate to Business Management as a minor (second most requested option behind Statistics) so there is a natural affinity between the two student populations.

Finally, many of the PCoM Supply Chain faculty have Industrial Engineering backgrounds or experience in the field. This academic minor will enable collaborations between PCoM and COE to serve the interests of students in a growing field that influences all engineering and most business disciplines. Combining the expertise from faculty in both Colleges creates a multidisciplinary and rigorous curriculum that meets the needs of an expanding marketplace for this skill set. The goal is to provide an offering that is in-line with other highly competitive engineering programs (for example, Georgia Tech - #1, Purdue - #3, Penn State - #9), that each have a minor or concentration for students around supply chain.

Note: Rankings are derived from 2019 US News & World Report analysis of Industrial & Systems Engineering Undergraduate Programs

Statement of Academic Minor Program Objectives

1. Create a multi-disciplinary academic offering that combines courses from both business and engineering that is assessable to students from both colleges.
2. Prepare undergraduate students to work in a globally-connected marketplace that requires firms to be agile and capable of dynamically reallocating resources to meet the needs of their customers.
3. Develop skills in the fundamentals of supply chain engineering and operations that cultivate the ability to drive systematic changes across a broad variety of industry segments, markets and applications.

Upon completion of the minor students will be able to:

1. Identify planning, scheduling and logistics issues using a variety of conceptual frameworks to mitigate issues in the overall supply chain system design.
2. Explain current trends in supply chain operations and engineering.
3. Analyze a supply chain network and optimize it for efficiency, effectiveness and quality.

List of courses constituting the proposed minor

Completion of the minor will require a minimum of 15 credit hours. This includes one required introductory course and a selection of courses from Group A (Engineering) and Group B (Business). The table below highlights the stated requirements.

Required Course (3 hours)

ISE 411	Supply Chain Economics & Decision Making Prerequisite: ISE 135 **FALL ONLY**	This course studies techniques for coordination and collaboration in supply chains. Applications include pricing strategies, revenue management, gaming, and incentives. Supply chain spans from raw materials to end products or services for consumers. Various economic forces shape the supply chain over time. To succeed, an entity must understand these forces and analyze the issues qualitatively and quantitatively. These forces include but are not limited to: economies of scale, batch (including pooling), speed, uniformity, scope and flexibility, competition, collaborations, pricing, gaming & incentives.

Group A Electives (6-9 hours)		
ISE 361	Deterministic Models in Industrial Engineering Prerequisite: ISE 135 & MA 303/341/405 **FALL & SPRING**	Introduction to mathematical modeling, analysis techniques, and solution procedures applicable to decision-making problems in a deterministic environment. Linear programming models and algorithms and associated computer codes are emphasized.
ISE 413	Humanitarian Logistics Prerequisite: ISE 135 **SPRING ONLY**	The intention of this course is to provide a comprehensive treatment on the use of quantitative modeling for decision-making and best practices in the service industries. Students in this course should be provided with the quantitative skills necessary to model key decisions and performance metrics associated with services. Types of decisions include the management of resources, distribution of goods and services to customers, and the analysis and design of queuing systems.
ISE 433	Service Systems Engineering Prerequisite: ISE 361 **SPRING ONLY**	This purpose of this course is to familiarize students with an array of problems and methods that pertain to the modeling, analysis and control of contemporary production and service systems.
ISE 453	Design of Production, Logistics, and Service Systems Prerequisite: ISE 361, ST 372, Corequisite: ISE 311 **FALL & SPRING**	Principles and practice in design of facilities and logistics networks. Integration of supply chain design, capacity planning, facility layout, material handling, and storage and warehousing issues into overall production system design. Emphasis on economic justification of alternative designs and use of computer software to aid design process. Group projects.
ISE 553	Modeling & Analysis of Supply Chains Prerequisites: ISE 361 and ST 372 **SPRING ONLY**	This is an introductory course on supply chain management and inventory control. The course will present both classical results, such as the base-stock policy and s-S policy, and state-of-the-art modeling tools. The course emphasizes on using engineering models to provide managerial insights into the design and operations of real systems.
Group B Electives (3-6 hours)		
BUS 472	Operations Planning & Control Systems Prerequisite: BUS 370 Corequisite: BUS 470	Design and management of operations planning and control systems for manufacturing and service firms. Forecasting, capacity management, production and workforce scheduling, project management, just-in-time and time-based competition, the impact of information technologies on planning and control systems.
BUS 474	Logistics Management Prerequisite: BUS 370 Corequisite: BUS 470	Management of physical flows of goods between firms, management of inventories that support those flows, and assessment of the effects of freight transportation choices on these management activities. A variety of conceptual frameworks and quantitative tools are used to formulate the basis for effective logistics decision making and relate those decisions to broader issues in managing the entire supply chain and fulfilling the strategic objectives of a firm.
BUS 475	Purchasing & Supply Management Prerequisite: BUS 370	This course is designed to help students develop knowledge of basic principles in purchasing and supply

	Corequisite: BUS 470	management. Students will be able to explain the potential contributions of these efforts of the competitiveness of the firm.
BUS 479	Supply Chain Practicum Prerequisite: BUS 370 & BUS 4XX	This course is comprised of a team-based project working on a Supply Chain Resource Consortium (SCRC) partner company's supply chain management issues. These projects vary in scope as are company's supply chain issues and improvement initiatives. Student groups need to provide their own transportation to off-campus sites.

Catalog Description of Proposed Minor

The Supply Chain Engineering Minor allows students to develop skills associated with the networks and processes that move materials and supplies into production facilities, transforms them into finished goods and then distributes products to customer markets. This minor takes a multi-disciplinary approach to solving problems associated with logistics, operations, network design, systems and services optimization, planning/scheduling and alternatives analysis. Completion of this minor will prepare undergraduate students for the global marketplace by providing a strong foundation and integrated framework from which to navigate decisions, influence production planning, and impact time to market.

Administration of the Minor

Kanton Reynolds, Ph.D.
Director, Undergraduate Programs & Associate Teaching Professor
Edward P. Fitts Department of Industrial & Systems Engineering
(919) 515-0605
Ktreyno2@ncsu.edu

Requirements for Admission and Completion of the Minor

- The program administrator will oversee admission to and certify completion of the minor program.
- Admission to the minor requires a minimum 3.25 GPA and completion of a short application form.
- Students shall then complete the minor form and create a plan of work detailing the courses to be taken in order to satisfy the requirements by semester.
- Students accepted to the program will be required to meet with program administrator or designee during the registration period for each semester to ensure satisfactory process toward the minor.
- Students are NOT allowed to double count any required course in *Group A* toward both departmental major and minor requirements.
- All courses must be completed at NC State University.
- All minor courses must be completed with a grade of C- or higher.
- All minor courses must be taken for a letter grade.
- The program administrator will verify that all requirements have been met and certify the minor prior to graduation. The minor must be completed no later than the semester in which the student expects to graduate from their degree program. Paperwork for the certification should be completed no later than the end of the registration period for the student's final semester at NC State University.

Statement on Other Departments Likely to Be Affected and Summary of Consultations with those Departments

The courses in the minor are sourced from two departments: Fitts ISE and Poole College of Management/Business Administration. As the proposal is co-sponsored by the Edward P. Fitts Department of Industrial & Systems Engineering and the Department of Business Administration, only their respective faculty and program administrators needed to be consulted. To that end, discussions were held with the pertinent parties in the Department of Business Administration including Dr. Jason DeRousie, Director of Curriculum and Advising and the associated faculty for the operations/supply chain concentration including but not limited to Dr. Don Warsing, Ms. Tracy Freeman and Dr. Rob Handfield. Other PCoM Supply Chain faculty were consulted during their internal discussions and had input to the deliberations around the proposal to include Dr. Sebastian Heese, Dr. Eda Kemahlioglu-Ziya and Dr. Jeffrey Stonebraker. The following concerns are being addressed but there is agreement on and support for the proposal:

1) Enrollment management. Dr. Kanton Reynolds (ISE) and Dr. Jason DeRousie (PCoM) will jointly manage the enrollment process to ensure adequate access to courses for students from the counterpart academic unit.
2) Prerequisites for ISE courses. Dr. Jason DeRousie (PCoM) will work with PCoM faculty and students to understand which modifications or substitutions are necessary for math and statistics requirements that would make PCoM students eligible for ISE courses.
3) Prerequisites for PCoM courses. Dr. Jason DeRousie (PCoM) will work with PCoM faculty and Dr. Kanton Reynolds (ISE) to determine which ISE courses can substitute for PCoM prerequisites.

NC STATE UNIVERSITY

College of Design
Department of Art and Design

ncsu.edu/design

Campus Box 7701
50 Pullen Rd
Raleigh, NC 27695-7701
P: 919.515.8340

MEMORANDUM

To: Sharon Joines, College of Design Associate Dean
Kristen Schaeffer, Chair of the College of Design Curriculum Committee ,

From: Kathleen Rieder, Department Head in Art and Design

Subject: Revised ADN Curriculum Display

Date: October 3, 2019

The Department of Art and Design is requesting your review and approval of the reversion to the current FORMAT A: ADN Studio Curriculum Display.

April 30, 2019, Dean Hoversten met with students in the Art and Design Studio Program and assured them that changes would be made to restore the 6 credit hour Sophomore Studio. This action addressed student concerns that their degree audits would be maintained and the college policy of 6 credit hour studios, in their major, would meet the obligations of the degree audit to which they were admitted.

The Art and Design Department needs these changes to move forward as soon as possible. The department appreciates your attention to this request.

FORMAT A
(SEMESTER-BY-SEMESTER CURRICULUM DISPLAY)

Indicate display status: Current: Proposed: **x** Proposed Effective Semester: **Fall 2019**

Degree/Plan Title: Art and Design (Bachelor) Concentration/Subplan Title:

Plan SIS Code: Subplan SIS Code:

New Degree Audit required? (Y or N) **Y**

Critical Path Courses - Identify using the code (CP) which courses are considered critical path courses which represent specific major requirements that are predictive of student success in a given program/plan. Place the (CP) next to the credit hours for the course.

FRESHMAN YEAR			
FALL SEMESTER	CREDITS	SPRING SEMESTER	CREDITS
D 100 Design Thinking	3	D 105 First Year Studio II[1,9]	6
D 104 First Year Studio I[1,9]	6	MA 111 Precalculus, Algebra and Trigonometry [A]	3
ENG 101 Acad. Writing & Research[9,H]	4	ADN 281 Drawing I [2,9]	3
ADN 219 Digital Imaging[2,9]	3	GEP Health and Exercise Studies Course[E]	1
	*Total:*16		*Total:*13
SOPHOMORE YEAR			
FALL SEMESTER	CREDITS	SPRING SEMESTER	CREDITS
~~ADN 202 Sophomore Practicum section I & II~~ [1,9]	~~3~~	~~ADN 203 Sophomore Practicum section I & II~~ [1,9]	~~3~~
ADN 202 Sophomore Studio Series [1,9]	3	ADN 204 Sophomore Studio Series [1,9]	3
ADN 203 Sophomore Studio Series [1,9]	3	ADN 205 Sophomore Studio Series [1,9]	3
ADN Advised Elective [3,4] ~~Drawing~~[4]	3	ADN Advised Elective [3,4] ~~Digital Media~~[4]	3
Advanced Writing[6]		History of Art, History of Design[5]	
GEP Mathematical Sciences Requirement[A]		GEP Natural Sciences Requirement [B]	
	Total:15		*Total:*15
JUNIOR YEAR - ***International Experience[8] recommended at this time***			
FALL SEMESTER	CREDITS	SPRING SEMESTER	CREDITS
ADN Studio[1,9]	6	ADN Studio[1,9]	6
GEP Natural Sciences Requirement[B]	4	GEP Social Sciences Requirement [D]	3
ADN Advised Elective[7]	3	GEP Humanities Requirement [C]	3
GEP Social Sciences Requirement[D]	3	ADN 418 Contemporary Issues in Art & Design[2,9]	3
Free Elective	2		
	Total:18		*Total:*15
SENIOR YEAR			
FALL SEMESTER	CREDITS	SPRING SEMESTER	CREDITS
ADN Studio[1,9]	6	ADN Studio[1,9]	6
ADN Advised Elective[7]	3	ADN Advised Elective[7]	3
ADN 493 Art + Design Senior Lecture[2,9]	3	GEP Humanities Requirement[C]	3
GEP Addl. Breadth Requirement [F]	3	GEP Health & Exercise Studies Course [E]	1
	Total:15		*Total:13*
Minimum Credit Hours Required for Graduation [G,I,J,K]: 120			

Bachelor of Art and Design Major/Program Footnotes:
Total requirements for graduation: 120 credit hours
Art and Design Critical Path: 84 credit hours

Art and Design Studio: 48 credit hours

1. One (1) six-credit–hour studio or two (2) three-credit hour studios is required each semester; no more than six-credit hours of studio may be taken in any semester. Thirty-six (36) credit hours of studios beyond required First Year Experience (D 104, D 105) are required for a total of forty-eight (48) studio credit hours. All sections of ADN 202, AND 203, ADN 204, and ADN 205 must be taken sophomore year to complete the Sophomore Studio Series. The Art + Design Sophomore Studio Series focuses on the creative disciplines foundations taught at the intermediate and advance level Art + Design electives and studios. The Sophomore Studio Series courses include: Visual Composition (ADN 202); Sequential Imaging (ADN 203); Applied Creative Processes (ADN 204); and Interactive

Media (ADN 205): The other four (4) studio courses may be selected from ADN 460, ADN 470, ADN 480, ADN 490, ADN 560, ADN 570, or one swing studio course from: ARC 400, GD 201, GD 202, ID 201, or LAR 400. No more than one non-ADN studio course can fulfill the studio requirement.

Art and Design Required Core Classes: 24 credit hours

2. Twelve (12) credit hours of required Art and Design Core courses include: ADN 219, ADN 281, ADN 418, and ADN 493.
3. An additional three (3) credit hours of Digital Media or Fibers and Textiles Elective beyond ADN 219 is required, selected from: ADN 311, ADN 319, ADN 419, ADN 411, ADN 492, ID 215, ID 315, ID 415, ARC 251, or TAM 271.
4. An additional three (3) credit hours of Drawing Elective beyond ADN 281 are required, selected from ADN 411, ADN 481, ADN 492, ID 318, ID 418, and ARC 251.
5. One survey course (3 credit hours) in Art History or Design History is required. Select from the following: ADN 475, ADN 492, HA 202, HA 203, HA 298, ARC 141, GD 203, ID 244 or LAR 444.
6. Advanced Writing (3 credit hours) select one: ENG 287, 288, 292, 316, 323, 325.

Art and Design Advised Electives: 9 credit hours

7. Nine (9) hours of ADN Advised Electives required in addition to the required first year ADN 281, ADN 219, and second year ADN Advised Electives in Drawing and Digital Media. Select courses from ADN 112, 212, 220, 221, 224, 226, 272, 273, 276, 274, 292, 311, 312, 319, 372, 384, 386, 411, 414, 415, 419, 423, 481, and 494.

International Experience Requirement

8. The Spring semester of Junior year opens the opportunity to fulfill the College's International Experience requirement. Please consult your advisor and the Department Head.

9. A grade of C- or higher is required.

General Education Program (GEP) requirements and GEP Footnotes:

To complete the requirements for graduation and the General Education Program, the following category credit hours and co-requisites must be satisfied. University approved GEP course lists for each of the following categories can be found at http://www.ncsu.edu/uap/academic-standards/gep/courselists/index.html.

A. **Mathematical Sciences** (6 credit hours – *Includes recommended MA 111 and one course from the University approved GEP Mathematical Sciences course list).*

B. **Natural Sciences** (7 credit hours – include one laboratory course or course with a lab)
Choose from the University approved GEP Natural Sciences course list or the following course(s) if completed as part of the Major requirements may fulfill part or all of this requirement:

C. **Humanities** (6 credit hours selected from two different disciplines/course prefixes)
Choose from the University approved GEP Humanities course list or the following course(s) if completed as part of the Major requirements may fulfill part or all of this requirement:

D. **Social Sciences** (6 credit hours selected from two different disciplines/course prefixes)
Choose from the University approved GEP Social Sciences course list or the following course(s) if completed as part of the Major requirements may fulfill part or all of this requirement:

E. **Health and Exercise Studies** (2 credit hours – at least one 100-level Fitness and Wellness Course)
Choose from the University approved GEP Physical Education/Healthy Living course list.

F. **Additional Breadth** - (3 credit hours to be selected from the following checked University approved GEP course lists)
☐Humanities/Social Sciences/Visual and Performing Arts or ☒Mathematical Sciences/Natural Sciences/Engineering

G. **Interdisciplinary Perspectives** (5-6 credit hours)
Choose from the University approved GEP Interdisciplinary Perspectives course list or the following course(s) if completed as part of the Major requirements may fulfill part or all of this requirement:

H. **Introduction to Writing** (4 credit hours satisfied by completing ENG 101 with a C- or better)

The following **Co-Requisites** must be satisfied to complete the General Education Program requirements (**but do not count towards minimum credit hours**):

I. **U.S. Diversity** (USD)
Choose from the University approved GEP U.S. Diversity course list or choose a course identified on the approved GEP course lists as meeting the U.S. Diversity (USD) co-requisite. The following course(s) completed as part of the Major requirements may fulfill this requirement:

J. **Global Knowledge** (GK)
Choose from the University approved GEP Global Knowledge course list or choose a course identified on the approved GEP course lists as meeting the Global Knowledge (GK) co-requisite. The following course(s) completed as part of the Major requirements may fulfill this requirement:

K. **Foreign Language proficiency** - Proficiency at the FL_102 level is required for graduation.

FORMAT A
(SEMESTER-BY-SEMESTER CURRICULUM DISPLAY)

Indicate display status: Current: Proposed: **x** Proposed Effective Semester: **Fall 2019**

Degree/Plan Title: Art and Design (Bachelor) Concentration/Subplan Title:

Plan SIS Code: Subplan SIS Code:

New Degree Audit required? (Y or N) **Y**

Critical Path Courses - Identify using the code (CP) which courses are considered critical path courses which represent specific major requirements that are predictive of student success in a given program/plan. Place the (CP) next to the credit hours for the course.

FRESHMAN YEAR			
FALL SEMESTER	CREDITS	SPRING SEMESTER	CREDITS
D 100 Design Thinking	3	D 105 First Year Studio II[1,9]	6
D 104 First Year Studio I[1,9]	6	MA 111 Precalculus, Algebra and	3
ENG 101 Acad. Writing & Research[9,H]	4	Trigonometry [A]	3
ADN 219 Digital Imaging[2,9]	3	ADN 281 Basic Drawing[2,9]	1
		GEP Health and Exercise Studies Course[E]	
	*Total:*16		*Total:*13
SOPHOMORE YEAR			
FALL SEMESTER	CREDITS	SPRING SEMESTER	CREDITS
ADN 202 Sophomore Studio[1,9]	6	ADN 204 Design Studio[3,8]	6
ADN Advised Elective [3,4]	3	ADN Advised Elective[3,4]	3
Advanced Writing[6]	3	History of Art, History of Design [5]	3
GEP Mathematical|Sciences Requirement[A]	3	GEP Natural Sciences Requirement [B]	3
	Total:15		*Total:*15
JUNIOR YEAR - ***International Experience[9] recommended at this time***			
FALL SEMESTER	CREDITS	SPRING SEMESTER	CREDITS
ADN Studio[1,9]	6	ADN Studio [1,9]	6
GEP Natural Sciences Requirement[B]	4	GEP Social Sciences Requirement[D]	3
ADN Advised Elective[7]	3	GEP Humanities Requirement[C]	3
GEP Social Sciences Requirement[D]	3	ADN 418 Cont. Moral Issues in Art & Design[2,9]	3
Free Elective	2		
	Total:18		*Total:*15
SENIOR YEAR			
FALL SEMESTER	CREDITS	SPRING SEMESTER	CREDITS
ADN Studio [1,9]	6	ADN Studio[1,9]	6
ADN Advised Elective[7]	3	ADN Advised Elective[7]	3
ADN 493 Senior Lecture[2,9]	3	GEP Humanities Requirement[C]	3
GEP Addl. Breadth Requirement[F]	3	GEP Health & Exercise Studies Course[E]	1
	Total:15		*Total:13*
Minimum Credit Hours Required for Graduation[G,I,J,K]: 120			

Bachelor of Art and Design Major/Program Footnotes:

Total requirements for graduation: 120 credit hours
Art and Design Critical Path: 84 credit hours

Art and Design Studio: 48 credit hours

1. One (1) six-credit–hour studio is required each semester; no more than one studio may be taken in any semester. Six (6) additional studio courses (36 credit hours) beyond First Year Experience (D 104, D 105) are required for a total of forty-eight (48) studio credit hours. ADN 202 and ADN 204 must be taken sophomore year. The other four (4) studio courses may be selected from ADN 460, ADN 470, ADN 480, ADN 490, ADN 560, ADN 570, or one swing studio course from: ARC 400, GD 201, GD 202, ID 201, or LAR 400. No more than one non-ADN studio course is allowed to fulfill the studio requirement.

Art and Design Required Core Classes: 24 credit hours

2. Twelve (12) credit hours of required Art and Design Core courses include: ADN 219, ADN 281, ADN 418, and ADN 493.
3. An additional three (3) credit hours of Digital Media or Fibers Electives beyond ADN 219 is required, selected from: ADN 311, ADN 319, ADN 419, ADN 411, ADN 492, ID 215, ID 315, ID 415, ARC 251, or TAM 271.
4. An additional three (3) credit hours of Drawing Elective beyond ADN 281 are required, selected from ADN 411, **ADN 481,** ADN 492, ID 318, ID 418, and ARC 251.
5. One survey course (3 credit hours) in Art History or Design History is required. Select from the following: ADN 475, ADN 492, HA 202, HA 203, HA 298, ARC 141, GD 203, ID 244 or LAR 444.
6. Advanced Writing (3 credit hours) select one: ENG 287, 288, 292, 316, 323, 325.

Art and Design Advised Electives: 9 credit hours

7. Nine (9) hours of ADN Advised Electives required in addition to the required first year ADN 281, ADN 219, and second year ADN Advised Electives in Drawing and Digital Media. Select courses from ADN 112, 212, 220, 221, 224, 226, 272, 273, 276, 274, 292, 311, 312, 319, 372, 384, 386, 411, 414, 415, 419, 423, 481, and 494.

International Experience Requirement

8. The Spring semester of Junior year opens the opportunity to fulfill the College's International Experience requirement. Please consult your advisor and the Department Head.

9. **A grade of C- or higher is required.**

General Education Program (GEP) requirements and GEP Footnotes:

To complete the requirements for graduation and the General Education Program, the following category credit hours and co-requisites must be satisfied. University approved GEP course lists for each of the following categories can be found at http://www.ncsu.edu/uap/academic-standards/gep/courselists/index.html.

A. **Mathematical Sciences** (6 credit hours – *Includes MA 111 and one course from the University approved GEP Mathematical Sciences course list).*

B. **Natural Sciences** (7 credit hours – include one laboratory course or course with a lab)
Choose from the University approved GEP Natural Sciences course list or the following course(s) if completed as part of the Major requirements may fulfill part or all of this requirement:

C. **Humanities** (6 credit hours selected from **two different** disciplines/course prefixes)
Choose from the University approved GEP Humanities course list or the following course(s) if completed as part of the Major requirements may fulfill part or all of this requirement:

D. **Social Sciences** (6 credit hours selected from two different disciplines/course prefixes)
Choose from the University approved GEP Social Sciences course list or the following course(s) if completed as part of the Major requirements may fulfill part or all of this requirement:

E. **Health and Exercise Studies** (2 credit hours – at least one 100-level Fitness and Wellness Course)
Choose from the University approved GEP Physical Education/Healthy Living course list.

F. **Additional Breadth** - (3 credit hours to be selected from the following checked University approved GEP course lists)
☐Humanities/Social Sciences/Visual and Performing Arts or ☒Mathematical Sciences/Natural Sciences/Engineering

G. **Interdisciplinary Perspectives** (5-6 credit hours)
Choose from the University approved GEP Interdisciplinary Perspectives course list or the following course(s) if completed as part of the Major requirements may fulfill part or all of this requirement:

H. **Introduction to Writing** (4 credit hours satisfied by completing ENG 101 with a C- or better)

The following **Co-Requisites** must be satisfied to complete the General Education Program requirements (**but do not count towards minimum credit hours**):

I. **U.S. Diversity** (USD)
Choose from the University approved GEP U.S. Diversity course list or choose a course identified on the approved GEP course lists as meeting the U.S. Diversity (USD) co-requisite. The following course(s) completed as part of the Major requirements may fulfill this requirement:

J. **Global Knowledge** (GK)
Choose from the University approved GEP Global Knowledge course list or choose a course identified on the approved GEP course lists as meeting the Global Knowledge (GK) co-requisite. The following course(s) completed as part of the Major requirements may fulfill this requirement:

K. **Foreign Language proficiency** - Proficiency at the FL_102 level is required for graduation.

CURRICULUM REQUIREMENTS

Format B

Degree/Plan Title: Art and Design (Bachelor)	Plan SIS Code:
Concentration/Subplan Title:	Subplan SIS Code:
Indicate requirements status: Current: Proposed: X	Proposed Effective Semester: Fall 2019
New Degree Audit required? (Y or N) Y	
Critical Path Courses - Identify using the code (CP) which courses are considered critical path courses which represent specific major requirements that are predictive of student success in a given program/plan. Place the (CP) next to the credit hours for the course.	

MAJOR FIELD OF STUDY REQUIREMENTS:		
Required Courses/Groups/ Electives:	***Credit Hours***	***GEP category, if applicable***
Indicate if course or course groupings have a C-wall or MGPA requirement and which are considered Critical Path courses – indicate with (CP) next to applic. course.		**List GEP category and hours satisfied by a Major requirement**
Art and Design Studio: 48 credit hours 1. One(1) six-credit–hour studio is required each semester; no more than six-credit hours of studio may be taken in any semester. Thirty-six (36) credit hours of studios beyond required First Year Experience (D 104, D 105) are required for a total of forty-eight (48) studio credit hours. ADN 202 and ADN 204, must be taken sophomore year to complete the Sophomore Studio Series. The Art+Design Sophomore Studio Series focuses on the creative disciplines foundations taught at the intermediate level of Art + Design. The other four (4) studio courses may be selected from ADN 460, ADN 470, ADN 480, ADN 490, ADN 560, ADN 570, or one swing studio course from: ARC 400, GD 201, GD 202, ID 201, or LAR 400. No more than one non-ADN studio course can fulfill the studio requirement.	48	C-wall for all Art and Design Studios
Art and Design Required Core Classes: 24 credit hours 2. Twelve (12) credit hours of required Art and Design Core courses include: ADN 219, ADN 281, ADN 418, and ADN 493. 3. An additional three (3) credit hours of Digital Media or Fibers and Textiles Elective beyond ADN 219 is required, selected from: ADN 311, ADN 319, ADN 419, ADN 411, ADN 492, ID 215, ID 315, ID 415, ARC 251, or TAM 271. 4. An additional three (3) credit hours of Drawing Elective beyond ADN 281 are required, selected from ADN 411, ADN 481, ADN 492, ID 318, ID 418, and ARC 251. 5. One survey course (3 credit hours) in Art History or Design History is required. Select from the following: ADN 475, ADN 492, HA 202, HA 203, HA 298, ARC 141, GD 203, ID 244 or LAR 444. 6. Advanced Writing (3 credit hours) select one: ENG 287, 288, 292, 316, 323, 325.	24	C-wall for all Art and Design Required Core Classes
Art and Design Advised Electives: 9 credit hours 7. Nine (9) hours of ADN Advised Electives required in addition to the required first year ADN 281, ADN 219, and second year ADN Advised Electives in Drawing and Digital Media. Select courses from ADN 112, 212, 220, 221, 224, 226, 272, 273, 276, 274, 292, 311, 312, 319, 372, 384, 386, 411, 414, 415, 419, 423, 481, and 494.	9	
Concentration Courses/Groups/Electives:		
Free Electives:	2	

Total credit hours under Major Field of Study: *Minimum 27 hours required in program area.*	83	
COLLEGE REQUIREMENTS:		
Orientation Course(s):		
Other: D100	3	
Total credit hours under College Requirements:	86	

NCSU GENERAL EDUCATION PROGRAM REQUIREMENTS

Courses in the Major and/or Minor may also fulfill a General Education requirement; however, a GEP category may not be subset to require a specific course from the category list. Required courses must be listed in the Major/College requirements.

Specific courses should not be listed in any of the fields below other than ENG 101.

At least one of the following must be listed:

1. Choose course(s) from the University Approved GEP course list for this category.
2. Minimum requirements are satisfied by Major/College course requirements.
3. Major/College course requirement satisfies **X** credit hrs of this requirement. Remaining hours required must be chosen from the University Approved GEP course list for the category.
4. Co-requisite is satisfied by a Major/College course requirement.
5. Choose course(s) from the University Approved GEP course lists for the Humanities/ Social Sciences/ Visual & Performing Arts.
6. Choose course(s) from the University Approved GEP course lists for Natural Sciences/Mathematical Sciences.

General Education Program Requirements: *Minimum 39-40 hrs*	*Credit hours*	*How will the GEP requirement be met? (Choose applicable statement from 1-6 listed above)*
Mathematical Sciences *(6 credits)* **(At least 1 course with *MA or ST* prefix)** *Course(s) in the Major may double-count to satisfy this requirement and also satisfy either the Global Knowledge or U.S. Diversity co-requisites.*	6	*(Choose statement 1, 2 or 3)* 3 hours of this requirement is satisfied by the Mathematics requirement in the major. Choose an additional course(s) from the University Approved GEP course list for this category.
Natural Sciences *(7 credits)* **(At least 1 *lab* course or course with a *lab*)** *Course(s) in the Major may double-count to satisfy this requirement and also satisfy either the Global Knowledge or U.S. Diversity co-requisites.*	7	*(Choose statement 1, 2 or 3)* Choose course(s) from the University Approved GEP course list for this category.
English 101 **(C- or better required)** *(4 credits)*	4	ENG 101
Humanities *(6 credits)* **(Courses from *two different* disciplines)** *Course(s) in the Major may double-count to satisfy this requirement and also satisfy either the Global Knowledge or U.S. Diversity co-requisites.*	6	*(Choose statement 1, 2 or 3)* Choose course(s) from the University Approved GEP course list for this category.
Social Sciences *(6 credits)* **(Courses from *two different* disciplines)** *Course(s) in the Major may double-count to satisfy this requirement and also satisfy either the Global Knowledge or U.S. Diversity co-requisites.*	6	*(Choose statement 1, 2 or 3)* Choose course(s) from the University Approved GEP course list for this category.
Additional Breadth *(3 credits)* **(Choose approach that is *different* from the approach of the Major)** *Major/College requirements cannot satisfy this requirement and an AB course cannot be double-counted except in satisfying the Global Knowledge or U.S. Diversity co-requisites.*	3	*(Choose statement 5 or 6)* Choose course(s) from the University Approved GEP course list for this category.
Interdisciplinary Perspectives *(5 credits)* *Course(s) in the Major may double-count to satisfy this requirement and also satisfy either the Global Knowledge or U.S. Diversity co-requisites.*		*(Choose statement 1, 2 or 3)*
Health and Exercise Studies *(2 credits)* **(Including one *Fitness and Wellness* course)**	2	*Choose course(s) from the University Approved GEP course list for this category.*
Total credit hours needed to complete GEP that are not satisfied as part of the Major/College requirements.	34	
GEP Co-Requisites:		***Courses taken in the Major, GEP, or Minor may double-count to fulfill the co-requisites. Courses that satisfy the U.S. Diversity or Global Knowledge co-requisite are marked on course lists with a "USD" or "GK" indicator.***

U.S. Diversity co-requisite (USD)	n/a	*(Choose statement 1 or 4)*
Global Knowledge co-requisite (GK)	n/a	*(Choose statement 1 or 4)*
Foreign Language Proficiency	n/a	Proficiency at the FL_102 level required.
The following requirements must be satisfied within the College/Program:		Place an **X** in the credit hour box to indicate below that the requirement is **"Satisfied by College/Program Requirements"**
Communication in the Major (Advanced Communication)		Satisfied by College/Program Requirements
Technology Fluency		Satisfied by College/Program Requirements
Total credit hours required to complete Degree: **Total must be within 120-128 credit hours.**	**120**	**As applicable, indicate here the overall GPA requirement for degree completion including course completion.**

North Carolina State University
Routing for DASA or Graduate School Approval of Other Degree Program Actions

This request has been reviewed and approved by the appropriate campus committees and authorities.

Completed Proposal
Endorsed By:

Kathleen Rieder — 10/22/2019
Head, Department/Program — Date

Recommended By:

[signature] — 10/22/19
Chair, College Curriculum Committee — Date

Endorsed By:

[signature] — 10/22/19
College Dean — Date

Proposal moves to Undergraduate or Graduate office for routing
Recommended By:

Vice Provost, DELTA (if DE degree/certificate) — Date

Recommended By:

Chair, University Courses & Curricula Committee or Administrative Board of the Graduate School — Date

Approved By:

Dean, DASA or the Graduate School

Updated 04/11/2019

NORTH CAROLINA STATE UNIVERSITY
UNDERGRADUATE CURRICULUM ACTION FORM
Academic Minor

DEPARTMENT(S):
Landscape Architecture

TITLE OF THE MINOR:
Landscape Architecture Minor (12LND)

TYPE OF PROPOSAL:
New Minor: ____
Revision to Minor: _X___
Discontinuation: ____

PROPOSED EFFECTIVE DATE: __May 31, 2019_____ APPROVED EFFECTIVE DATE: _____

ATTACHMENTS INCLUDED: **SEE BELOW**

1. Statement of Justification
2. Statement of Academic Minor Program Objectives
3. List of Courses constituting the Proposed Minor
4. Catalog Description of Proposed Minor
5. Administration of the Minor (Contact information for Administrator of the Minor)
6. Requirements for Admission and Completion of the Minor
7. Statement on Other Departments Likely to be Affected and Summary of Consultations with those Departments
8. *Optional*: Projected Resources and Enrollment

REQUIRED SIGNATURES:

4.8.19
Head, Department/Program Date

Kathleen Rieder 4/23/19
Chair, College Curriculum Committee Date

Mark Eliason Foreston 10/1/19
College Dean Date

OTHER REQUIRED SIGNATURES AS NEEDED:

Chair, College Curriculum Committee Date

College Dean Date

Chair, University Courses & Curricula Committee Date

Dean, Division of Academic and Student Affairs (DASA) Date

LANDSCAPE ARCHITECTURE MINOR (12LND)

DESCRIPTION

The Minor in Landscape Architecture will provide a basic understanding of the nature of the profession of Landscape Architecture. Knowledge of Landscape Architecture history and theory provides a useful addition to a major in any of the University disciplines.

The Minor in Landscape Architecture is designed to:

- Provide a general background in the discipline with regard to landscape architecture research, development and design for students, whose primary professional practice will be in another discipline.
- Clarify the role of the profession of Landscape Architecture.
- Define how the profession of Landscape Architecture and all related professional disciplines contribute to the successful practice of design.

REQUIREMENTS

- Completion of 15 credit hours are required.
- A letter grade of 'C' or better will be required for credit in all courses in the minor program.

REQUIRED COURSES

None

ELECTIVE COURSES - 15 credit hours
To be determined in consultation with the minor coordinator

The courses listed below are some of the courses that can contribute to achievement of the Landscape Architecture Minor. Courses offered each semester are subject to change. A listing of courses for each semester will be sent to students registered for the minor prior to open enrollment.

Fall Semester LAR courses
(note: some courses may not be offered every fall)
LAR 444 Landscape History (3 cr)
LAR 520 Landscape and Culture (3 cr)
LAR 528 LA Construction Materials and Methods (3 cr)
LAR 534 Landscape Architecture Theory and Criticism (3 cr)
LAR 582 008 Survey of Natural Hazards and Disasters (3 cr)
LAR 582 009 GIS for Designers (3 cr)
LAR 514 LAR Digital Media II (3 cr)
LAR 501 LAR Intro Design Studio (6 cr)

Spring Semester LAR courses
(note: some courses may not be offered every spring)
LAR 540 Landscape Architecture Research and Strategic Thinking (3 cr)
LAR 543 Landscape Architecture Performance Metrics (3 cr)
LAR 545 Landscape Architecture and City Planning (3 cr)
LAR 546 The Landscape Imperative (3cr)
LAR 550 Landscape Architecture Professional Practice (3 cr)
LAR 582 001 History of Landscape Architecture (3 cr)
LAR 582 002 Disaster Resilient Policy, Engineering and Design
LAR 582 003 Environmental and Social Equity in Design (3 cr)
LAR 582 005 Natural Hazards, Disasters and Climate Change Adaptation Lecture Series (1 cr)
LAR 502 Site Planning and Design Studio (6 cr), prerequisite is LAR 501, exception is Architecture Students

Summer Session LAR Courses
(note: some courses may not be offered every summer)
LAR 523 Landscape Architecture Plant ID (2 cr)
LAR 524 Landscape Architecture Planting Design (2 cr)
LAR 582 006 Environment and Behavior for Designers (3 cr) *online course*

For students in the School of Architecture only, select one (1) course below in addition to three courses (9 credit hours) from the previously listed courses:

LAR 502 Site Planning and Design Studio (6 cr)
LAR 506 Landscape Architecture Design + Build Studio (6 cr)
LAR 507 Landscape Architecture Advanced Topics in Design Studios (6 cr)

ADMISSIONS

Entrance into the minor is by application, grade review and permission of the Department Chair. A GPA of 2.75 is required. Contact the Chair of the Department of Landscape Architecture (listed below) or the College of Scheduling Officer, Pam Christie-Tabron (200 Brooks Hall, 919.515.8308) for the application.

CERTIFICATION
The minor must be completed no later than the semester in which the student expects to graduate from his or her degree program. Paperwork for certification can be found in 223 Brooks Hall and should be completed during the registration period of the student's final semester at NC State.

CONTACT PERSON

Meg Calkins, FASLA, Department Head
Department of Landscape Architecture
215D Brooks Hall
919.515.8342
mecalkin@ncsu.edu
SIS Code:12LND

April 8, 2019

NORTH CAROLINA STATE UNIVERSITY
UNDERGRADUATE CURRICULUM ACTION FORM
Academic Minor

DEPARTMENT(S):

___Parks, Recreation & Tourism Management; STEM Education_____

TITLE OF THE MINOR:

____Environmental Education_____

TYPE OF PROPOSAL:

New Minor: __x_

Revision to Minor: ____

Discontinuation: ____

PROPOSED EFFECTIVE DATE: ___Spring 2020 ____ APPROVED EFFECTIVE DATE: _____

ATTACHMENTS INCLUDED:

1. Statement of Justification
2. Statement of Academic Minor Program Objectives
3. List of Courses constituting the Proposed Minor
4. Catalog Description of Proposed Minor
5. Administration of the Minor (Contact information for Administrator of the Minor)
6. Requirements for Admission and Completion of the Minor
7. Statement on Other Departments Likely to be Affected and Summary of Consultations with those Departments
8. *Optional:* Projected Resources and Enrollment

REQUIRED SIGNATURES:

9-11-19.
Head, Department/Program Date

10-7-19
Chair, College Curriculum Committee Date

10/7/19
College Dean Date

Chair, University Courses & Curricula Committee Date

Dean, Division of Academic and Student Affairs (DASA) Date

OTHER REQUIRED SIGNATURES AS NEEDED:

Chair, College Curriculum Committee Date

College Dean Date

Appendices

TABLE OF CONTENTS

STATEMENT OF JUSTIFICATION

As environmental challenges such as climate change, biodiversity loss, and food security begin to have real consequences for communities across the globe, there is a need for an environmentally literate citizenry. In an undergraduate setting, this can be framed as a need to train environmental scientists to communicate what they know to the public, as well as educators to be well-versed in environmental topics. We are proposing an interdisciplinary minor in environmental education that represents a collaboration between the College of Natural Resources and the College of Education, but is meant to serve all students at NC State.

From the perspective of the College of Natural Resources, though recognition for public engagement in natural resource management has existed for decades, recent years have seen intensified demand among employers such as the US Fish and Wildlife, US Forest Service, National Parks System and parallel state agencies for employees with demonstrated public outreach and engagement skills and experience. These calls reflect a recognition that natural resource management is inherently a public endeavor, as agencies are charged with caring for public goods. Further, they respond to the reality that public lands, wildlife, and natural resources depend entirely on a public that is invested in protecting them. Accordingly, skills such as public outreach, education, and communication are seen as central to the mission of these agencies as well as the existence of public resources for enjoyment by future generations. Although our natural resource programs excel at equipping students with technical skills in forestry, wildlife management, or parks management, training and experience in outreach and education is lacking.

From the perspective of the College of Education, environmental education offers a lens through which teachers can employ best teaching practices to deliver content across many disciplines, but especially science. Pedagogical theory supports the notion that learning is best conducted through direct

experiences with the material (e.g., hands-on learning) in authentic contexts (e.g., real-world applications). Environmental education offers a context in which learners can directly interact with the material (e.g., learning about ecology by going outside) and relate it to their own experiences (e.g., their own backyards). Further, environmental education practice often involves informal and outdoor contexts, areas often under-emphasized within typical undergraduate teaching licensure degree programs.

An undergraduate minor in Environmental Education will serve to address both these challenges simultaneously. Students with a natural science background will receive training in teaching practices and learning theory, and those with education expertise will gain deeper environmental content knowledge and practice applying it to diverse learning settings. These efforts will dovetail with the emerging informal science strands in the STEM education program, as well as ongoing efforts through the Leadership in Public Science cluster to increase the capacity for science communication at NC State and beyond. The minor is designed around the NC Environmental Education Certification Program, run through the NC Department of Environmental Quality (see eenorthcarolina.org/certification). Students will make considerable progress toward this State of North Carolina-run certification program by completing the minor.

STATEMENT OF ACADEMIC MINOR PROGRAM OBJECTIVES

The goal of this program is to provide training in both pedagogical theory and technique as well as content knowledge in natural sciences to prepare students to engage in environmental education. Specifically, students will be able to:

1. Describe the field of environmental education and identify specific environmental education positions and ways in which environmental education training can be an asset in a diverse suite of jobs related to education and the environment.
2. Plan, deliver and evaluate an environmental education program.
3. Make considerable progress toward the NC Environmental Education Certificate program (eenorthcarolina.org/certification).

LIST OF COURSES CONSTITUTING THE PROPOSE MINOR

Some courses listed here may also count as GEPs. Students should consult with their advisors to understand how classes they apply to the Environmental Education minor may also meet other requirements for GEPs, majors, other minors, certificates, or other programs. The Environmental Education minor does not object to double-counting courses. Please note that students may still be required to take prerequisite courses in order to enroll in the courses listed here, at the discretion of the instructor.

Required Courses (6 credit hours)

- ~~ED~~ EMS 350 Teaching Methods in Environmental Education
- PRT 385 Environmental Education in Practice

Elective Courses (9 credit hours)

Students must take 3 hours of Natural Sciences courses, 3 hours of Teaching and Facilitation courses, and 3 additional hours from either one of these categories OR from the Interdisciplinary Perspectives

courses. Students who identify other courses more appropriate to their goals should consult with the minor advisor to seek permission for those courses to count.

Natural Sciences (select 3 hours):

These courses are meant to provide the content knowledge commonly used in environmental education, which usually includes natural history or identification knowledge, knowledge of ecosystems, or knowledge of environmentally friendly practices.

FW 221 Conservation of Natural Resources
FW 333 Conservation Biology & Practice
FW 373 Vertebrate Natural History
FW 403 Urban Wildlife Management
NR 350 Sustainable Use of Natural Resources
FW 411/511 Human Dimensions of Wildlife
SMT 302 Processing of Biomaterial
PSE 200 From Papyrus to Plasma Screens: Paper and Society
PSE 335 Principles of Green Chemistry
ES 100 Environmental Science
ES 200 Climate Change and Sustainability
ES 300 Energy & the Environment
PB 200 Plant Life
PB 220 Local Flora
SSC 185 Land and Life
MEA 135 Environmental Issues in Water Resources
FOR 220 Urban and Community Forestry
FOR 260 Forest Ecology
FOR 330 North Carolina Forests
FOR 339 Dendrology

Teaching & Facilitation Courses (select 3 hours)
These courses are intend ended to give students a background in teaching and learning theory and practices.
EMS 205 Introduction to Teaching Science
EMS 375 Science Teaching Methods
PRT 214 Introduction to Adventure Education
PRT/HESM 215 Principles and Practices of Outdoor Leadership
PRT 442 Recreation & Park Interpretive Services
AEE 325 Planning and Delivering Non-Formal Education
AE 435 Professional Presentations in Agricultural and Life Sciences

Interdisciplinary Perspectives on the Environment (select 3 hours from here OR from any of the courses in the other two areas)
These courses are designed to give students a broader view beyond natural science and teaching. These courses may be particularly useful to those interested in a specific topic (e.g., environmental justice) or who anticipate employing EE principals in a diversity of careers (e.g., planning departments).

BIO 227 Understanding Structural Diversity through
Biological Illustration
CNR 250 Diversity and Environmental Justice
IDS 201 Environmental Ethics
IDS/NR 303 Humans and the Environment
HI 440 American Environmental History
ARE/EC 336 Environmental Economics
LAR 221 Intro to Environment and Behavior for Designers
LAR 444 History of Landscape Architecture

CATALOG DESCRIPTION OF PROPOSED MINOR

The undergraduate minor in Environmental Education is offered to students interested in building environmental literacy among pre-K through adult audiences. Environmental literacy includes environmental awareness and knowledge, pro-environmental attitudes and sensitivity, critical thinking skills necessary to analyze complex environmental challenges, and motivation to act in environmentally responsible ways. Undergraduates may be interested in careers including informal science education (e.g., in museums or aquaria), environmental interpretation (e.g., parks and nature centers), or formal K-12 education. The minor is designed to give an opportunity to make substantial progress toward the NC Environmental Education Certification program, a certification listed as a requirement (or working towards) for positions within many parks, informal science education facilities, and recognized and favored nationally by many museums, aquaria, and nature centers.

ADMINISTRATION OF THE MINOR

Kathryn Stevenson, Assistant Professor
Department of Parks, Recreation & Tourism Management
Biltmore 4008D, Box 8004
Kathryn_stevenson@ncsu.edu
919-515-2739

REQUIREMENTS FOR ADMISSION AND COMPLETION OF THE MINOR

To be certified as having completed the minor in Environmental education, students must have a minimum 2.0 grade point average across all courses used toward the minor. The minor will be certified prior to graduation. The minor must be completed no later than the semester in which the student expects to graduate from his or her degree program. Paperwork for the minor should be completed no later than during the registration period for the student's final semester at NC State. Other specifications include:

- Enrollment in the minor is open to any student at NC State.
- Students must take 6 hours of required courses and 9 hours of electives for a total of 15 hours, per the course requirements list
- No more than six (6) hours of transfer credits can be used toward the minor.

STATEMENT ON OTHER DEPARTMENTS LIKELY TO BE AFFECTED AND SUMMARY OF CONSULTATIONS WITH THOSE DEPARTMENTS

College of Natural Resources: *PRTM is within the College of Natural Resources, but as PRTM lead the effort, we consulted with the other departments. Dr. Stevenson sent an email to the department heads and undergraduate coordinators for each department on July 16, 2019, and a summary of communication follows:*

Forestry: Dr. Tom Gower (department head) responded with his support and sent along to several other department colleagues who commented directly on the proposed minor. Edits were on wording, and adjustments were made. Everyone was supportive – see emails

Forest Biomaterials: No response.

College of Education: We have been working closely with the STEM Ed department, and they are fully supportive. See attached emails and support letter from their department. In addition, Dr. Pasquinelli (Associate Dean for Academic Affairs, CNR) sent a consultation request to each College on August 5, and Dr. Stiff from CED replied promptly with support (see email).

College of Agriculture and Life Science, College of Science, College of Humanities and Social Sciences, Design, and Engineering. Dr. Pasquinelli requested a consultation with all colleges on August 5th via email. As above, College of Education confirmed support via email. In addition, College of Agriculture and Life Science responded with a few requests, which we incorporated (correcting one course name, adding two courses to our list of electives). We have not heard from the other Colleges.

PROJECTED RESOURCES AND ENROLLMENT (OPTIONAL)

We anticipate drawing from students enrolled in primarily natural sciences (e.g., Environmental Science, Biology) or learning sciences (e.g., STEM Education, Agricultural Education) majors that are looking to specialize in the reciprocal area. Accordingly, we expect the enrollments for both EMS 350 and PRT 385 to be strong with students enrolled in the minor. For the elective courses, we expect modest impacts on enrollment (e.g., 2-5 student annually), with many students having planned on taking these courses before enrolling in the minor. We do not anticipate the need for new faculty or new courses.

NC STATE UNIVERSITY

College of Education
Science, Technology, Engineering & Mathematics Education

2310 Stinson Drive
Raleigh, N.C. 27695
Campus Box 7801
P: 919-515-1740
Fax: 919-515-6892

July 30, 2019

Whom it may Concern:

RE: Minor in Environmental Education

As the Department Head of Science, Technology, Engineering and Mathematics (STEM) Education, I am documenting my support in creating a minor in Environmental Education. Environmental education offers a lens through which teachers can employ best teaching practices to deliver content across many disciplines, but especially science. Our department prepares quality educators for middle, secondary and post-secondary school science, technology, engineering, mathematics and informal education. The Department emphasizes exemplary research, teaching, extension and engagement through comprehensive programs from undergraduate through doctoral.

Upon reviewing the three credit elective hours (EMS205 and EMS 375), we are confident that we can and will meet the pedagogical needs of your proposal. I have discussed this proposal with the Department Leadership; hence, with the consultation and cooperation of the faculty we support this initiative.

Sincerely,

Aaron C. Clark, DTE
Department Head and Professor

NC STATE

Yvonne Lee <yplee@ncsu.edu>

Proposed new minor: Environmental Education

Melissa Pasquinelli <melissa_pasquinelli@ncsu.edu> Mon, Aug 5, 2019 at 1:39 PM
To: Deanna Dannels <dpdannel@ncsu.edu>, John Dole <jmdole@ncsu.edu>, Maria Oliver-Hoyo <mtoliver@ncsu.edu>, Sharon Joines <smbennet@ncsu.edu>, Jerome Lavelle <jplavell@ncsu.edu>, Lee Stiff <lvstiff@ncsu.edu>
Cc: Kathryn Stevenson <ktate@ncsu.edu>, Yvonne Lee <yplee@ncsu.edu>

Dear Sharon, Deanna, John, Maria, Jerome, and Lee,

The departments of Parks, Recreation & Tourism Management and STEM Education are preparing to propose an interdisciplinary undergraduate minor in Environmental Education. We are excited about this minor, as we see it as an opportunity for natural and life science students to gain education experience and education students to get a more in-depth understanding of the natural world and how they might incorporate it into their teaching. We are also partnering with the NC Office of Environmental Education and Public Affairs to ensure the minor closely aligns with the NC Environmental Education certification program. With some planning, students enrolled in the minor should have no trouble completing the state-run certification program that is recognized across the country.

We are contacting you as part of the consultation process. As you will see in the draft application form, one or more of the courses in your college has been proposed to be included as an elective. We envision students taking two required courses (6 credits total), and then an additional 9 credits across three categories: Natural Sciences, Teaching & Facilitation, and Interdisciplinary Perspectives on the Environment. Our goal with these electives is to give students a more in-depth understanding of these areas than they would gain from an introductory course, balancing the recognition that these students may be non-majors in these areas. Please note that we do not anticipate the minor will impact any course to a great degree; we anticipate a handful of students from the minor expressing interest in a course who would not have taken it anyway.

Please take a moment to review the minor proposal and let us know if you have any questions or concerns. We are also open to the potential inclusion of your courses or anything else. You may comment directly on the Google doc, or contact the minor coordinator, Kathryn Stevenson: kathryn_stevenson@ncsu.edu.

Thank you!

M e l i s s a A. P a s q u i n e l l i, P h. D.
Associate Dean for Academic Affairs | College of Natural Resources
University Faculty Scholar | Alumni Distinguished Undergrad. Professor
Professor, Forest Biomaterials
North Carolina State University

OFFICE: Biltmore 2018B | **PHONE:** (919)515-6191 | (919)515-9426 (Direct)
ADDRESS: Campus Box 8001 | 2820 Faucette Drive | Raleigh, NC 27606
MAP: https://maps.ncsu.edu/#/buildings/bi
CNR WEBSITES: go.ncsu.edu/checkoutcnr | https://cnr.ncsu.edu/academics/
RESEARCH TEAM: https://go.ncsu.edu/pasquinelli-lab
TWITTER: @docmelissap | **MEET:** mpasqui@ncsu.edu | **SKYPE:** melissa.a.pasquinelli
CALENDAR: https://go.ncsu.edu/pasquinelli-calendar

NC STATE

Kathryn Stevenson <ktate@ncsu.edu>

Proposed new minor: Environmental Education

2 messages

Lee Stiff <lvstiff@ncsu.edu> Mon, Aug 5, 2019 at 2:23 PM
To: kathryn_stevenson@ncsu.edu

Hi Kathryn,

I am fine with the proposed new minor.

Yours,
Lee

--
Lee V. Stiff, Ph.D.
Associate Dean for Faculty and Academic Affairs
Professor, Mathematics Education
Past President, National Council of Teachers of Mathematics (NCTM)
2019 NCTM Lifetime Achievement Award Recipient

204-D Poe Hall, College of Education
NC State University
Raleigh, NC 27695-7801
Office: (919) 515-5908
Email: lvstiff@ncsu.edu

Kathryn Stevenson <kathryn_stevenson@ncsu.edu> Mon, Aug 5, 2019 at 3:02 PM
To: Lee Stiff <lvstiff@ncsu.edu>

Thank you, Dr. Stiff! We are excited about this!

Kathryn
[Quoted text hidden]
--
Kathryn Stevenson
Assistant Professor
Parks, Recreation & Tourism Management | NC State University
Biltmore 4008D | 919.515.2739 (office) | 919.605.3292 (cell)
go.ncsu.edu/stevenson

NC STATE

Kathryn Stevenson <ktate@ncsu.edu>

Proposed new minor: Environmental Education

John Dole <jmdole@ncsu.edu> Fri, Aug 23, 2019 at 12:29 PM
To: Melissa Pasquinelli <melissa_pasquinelli@ncsu.edu>, Kathryn_stevenson@ncsu.edu

Melissa and Kathryn,

I have received responses from the three CALS departments impacted by this proposal:

Plant and Microbial Biology: Chad Jordan responded directly to Kathryn noted that the title of PB 200 should be revised to "Plant Life" and the PB 220 Local Flora would be a good course to add.
Crop and Soil Science: David Crouse responded "Looks good to me"
Agriculture and Human Sciences: Travis Park responded below. Note that he is suggesting that a course be added and included it (in red) in the attached proposal.

Thanks for checking with us. As you can see we are supportive. Let me know if you need any more information.
John

---------- Forwarded message ---------
From: **Travis Park** <tdpark@ncsu.edu>
Date: Fri, Aug 23, 2019 at 9:38 AM
Subject: Re: Proposed new minor: Environmental Education
To: John Dole <jmdole@ncsu.edu>

John,

Please find our consultation attached.

Thank you,

Travis

Travis Park
Associate Professor
Undergraduate Teaching Coordinator
NC Teach Ag Coordinator
Agricultural and Human Sciences

NC State University
Campus Box 7607 NCSU
1 Lampe Drive, 216 Ricks Hall
Raleigh, NC 27695-7607

t: 919.515.9441
f. 919.513.1169
m: 919.802.2219

On Fri, Aug 16, 2019 at 6:11 PM John Dole <jmdole@ncsu.edu> wrote:
> Dear all,
>
> Please see the message below from CNR. I reviewed the course list and all of your departments have courses included in the proposed certificate. Check to see if those courses are appropriate and if others would be useful to them. Feel free to also comment on the draft.

Thanks.

John

---------- Forwarded message ---------
From: **Melissa Pasquinelli** <melissa_pasquinelli@ncsu.edu>
Date: Mon, Aug 5, 2019 at 1:39 PM
Subject: Proposed new minor: Environmental Education
To: Deanna Dannels <dpdannel@ncsu.edu>, John Dole <jmdole@ncsu.edu>, Maria Oliver-Hoyo <mtoliver@ncsu.edu>, Sharon Joines <smbennet@ncsu.edu>, Jerome Lavelle <jplavell@ncsu.edu>, Lee Stiff <lvstiff@ncsu.edu>
Cc: Kathryn Stevenson <ktate@ncsu.edu>, Yvonne Lee <yplee@ncsu.edu>

[Quoted text hidden]

--

--

John M. Dole
Associate Dean & Director, Academic Programs
College of Agriculture and Life Sciences
111 Patterson Hall, Campus Box 7642
North Carolina State University
Raleigh, NC 27695-7642
919-515-2614 (phone)
https://cals.ncsu.edu/

[Quoted text hidden]

Appendeces for Minor application_Environmental Education.docx
32K

NC STATE

Kathryn Stevenson <ktate@ncsu.edu>

EE minor consultation

Kathryn Stevenson <kathryn_stevenson@ncsu.edu> Wed, Jul 17, 2019 at 10:17 AM
To: George Hess <grhess@ncsu.edu>

Perfect -- thanks, George!!

On Wed, Jul 17, 2019 at 10:11 AM George Hess <grhess@ncsu.edu> wrote:

> Hey, Kathryn,
>
> This is cool - thanks for pushing it!! I've left some comments in the document.
>
> Hope you're doing well!
>
> Cheers,
> george | go.ncsu.edu/GeorgeHess | 919.515.7437

> On 2019 Jul 17, at 6:16 AM, Kathryn Stevenson <kathryn_stevenson@ncsu.edu> wrote:
>
> Hi everyone,
>
> Tom, I know I've got your support! And of course we want FER input -- that's why I'm sending it to you :) If you want to go the full faculty route, go for it -- I'm just trying to get it in people's inboxes that are most likely to weigh in/have a stake in the game. I don't think we need a vote for the official process, but you are certainly free to do whatever you think is appropriate.
>
> Gary, thanks for the extra insight -- this CIMS/UCCC process continues to reveal all sorts of intricacies & surprises :) Yes, our hope is to get this rolling first thing in the fall. We haven't voted at the PRTM level (which I think we do need), but I'll get it on the docket as soon as Kanters will let me.
>
> George/Lara, here's the link again -- hopefully it'll work this time. On my view, when I click, it shows a preview that just says Appendices, but when I view as a google doc, it shows the whole thing. Hope that helps. Everyone should have commenting abilities, and I welcome them.
>
> Thanks again,
> Kathryn

> On Tue, Jul 16, 2019 at 4:57 PM Stith Gower <stgower@ncsu.edu> wrote:
>
> > K-
> > And just to be clear, I think this is fantastic, and will be popular with ES students. I just always feel the FER should get to have some input.
> > TG
> >
> > Dr. Stith Tom Gower
> >
> > Head, Dept of Forestry and Environmental Resources
> > College of Natural Resources
> > North Carolina State University
> > Campus Box 8008
> > Raleigh, NC 27695
> >
> > Phone: (919) 515 3873

On Tue, Jul 16, 2019 at 4:43 PM Gary Blank <gblank@ncsu.edu> wrote:

Kathryn,

I am going to copy George Hess on this reply, but you may need to send him the document because sometimes replies don't include the attachments. As Director of the ES and (I think still) NR programs, George may have some thoughts about this and his students' interests, and he is good at seeing hidden implications.

We do not need an FER endorsement on this minor so much as a look at potential enrollments in courses we offer, possible duplicity of content offerings, and opportunities for our students--the main purposes of course consultations. I will examine it for those considerations too.

Getting this ready for the first CNR Academic Affairs meeting late in August means your timing is appropriate since travel (I am in Sweden), prep for fall semester, and actual beginning of that semester will fly by. So thanks for reminding me of all I need to do in the next month ;-).

Dr. Gary B. Blank
Associate and Alumni Distinguished Undergraduate Professor
Department of Forestry and Environmental Resources
College of Natural Resources Box 8008
North Carolina State University
Raleigh, North Carolina 27695-8008
919.515-7566
Office: 5229 Jordan II

On Tue, Jul 16, 2019 at 1:54 PM Kathryn Stevenson <kathryn_stevenson@ncsu.edu> wrote:

Hi Tom & FER Team,

I've been working with Renee & Gail Jones over in STEM Ed to get this EE minor through, and I think we're really close!

We're at the point of gathering departmental and college consultations. You'll see what we have planned laid out starting on page 2 of this document. I'm fairly familiar with the FER/NR/FWCB curriculum, but I wouldn't be surprised if I'm overlooking something.

When you have a moment, I'd love your thoughts. I know it's summer, so if I don't hear anything back by the time I'm ready to move on this, I'll circle back before submitting. Also, please feel free to share with anyone else in FER -- wasn't sure how broad to go.

Thanks everyone!
Kathryn

--
Kathryn Stevenson
Assistant Professor
Parks, Recreation & Tourism Management | NC State University
Biltmore 4008D | 919.515.2739 (office) | 919.605.3292 (cell)
go.ncsu.edu/stevenson

--
Kathryn Stevenson
Assistant Professor
Parks, Recreation & Tourism Management | NC State University
Biltmore 4008D | 919.515.2739 (office) | 919.605.3292 (cell)
go.ncsu.edu/stevenson

--
Kathryn Stevenson
Assistant Professor
Parks, Recreation & Tourism Management | NC State University
Biltmore 4008D | 919.515.2739 (office) | 919.605.3292 (cell)
go.ncsu.edu/stevenson