

### University Courses & Curricula Committee 2020-2021

April 28th, 2021 Zoom Host 12:45pm-2:45pm

#### Call to Order 12:45pm

- ≻ Welcome from Chair Wendy Krause
- Remarks and Updates from OUCCAS/DASA Approval of UCCC April 7<sup>th</sup>, 2021 Minutes ۶
- ۶
- ≻ **Course and Curricular Business**

#### **New Business**

Consent Agenda			
Action	Туре	Notes	
AEC 400 Applied Ecology	Minor	Revisions: Offering, Prerequisites, Catalog Description	
BME 345 Biomedical Solid Mechanics	Minor	Revisions: Contact Hours, Restrictive Statement	
CSC 226 Discrete Mathematics for Computer Scientists	Minor	Revisions: Prerequisite, Catalog Description	
CSC 281 Foundations of Interactive Game Design	Minor	Revisions: Term Offering, Year Offering	
CSC 495 Special Topics in Computer Science	Minor	Revisions: Year Offering, Catalog Description	
COM 417 Communication and Race	Minor	Revisions: Title, Abbr. Title, Prerequisites, Catalog Description	
COM 447 Communication and Globalization	Minor	Revisions: Offering, Prerequisites	
ENG 328 Language and Writing	Minor	Revisions: Catalog Description	
MSE 485 Biomaterials	Minor	Revisions: Offering, Prerequisite, Catalog Description	
PRT 150 Recreation, Sport, Tourism, and Event Management Orientation	Minor	Revisions: Title, Abbr. Title, Grading Method, Catalog Description	
PRT 152 Introduction to Parks, Recreation, Tourism, and Event Management	Minor	Revisions: Title, Abbr. Title, Catalog Description	
PRT 220 Foundations of Tourism and Event Management	Minor	Revisions: Title, Abbr. Title, Offering, Catalog Description	
PRT 230 Foundations of Outdoor Recreation Management	Minor	Revisions: Course Number, Title	
PRT 240 Geospatial Applications for Parks, Recreation, Tourism and Event Management	Minor	Revisions: Title, Contact Hours	
PRT 250 Facilities Management in Parks, Recreation, Tourism and Event Management	Minor	Revisions: Title, Abbr. Title, Offering, Contact Hours, Catalog Description	
PRT 307 Services, Facilities and Event Marketing	Minor	Revisions: Course Number, Offering, Catalog Description	
PRT 319 Sustainable Tourism	Minor	Revisions: Course Number, Catalog Description	
PRT 342 Recreation and Park Interpretive Services	Minor	Revisions: Course Number	
PRT 380 Evidence-based decision making in Recreation, Sport, Tourism, and Event Management	Minor	Revisions: Title, Abbr. Title, Catalog Description	
PRT 452 Field Experience in Nature-Based Recreation & Tourism Management	Minor	Revisions: Course Number, Title, Abbr. Title, Offering, Catalog Description	
PRT 454 Finance and Economics of Parks, Recreation, Tourism, and Event Management	Minor	Revisions: Title, Abbr. Title	
PS 203/PA 203 Introduction to Nonprofits	Minor	Revisions: Cross-listing, Offering	
PS 312/PA 312 Introduction to Public Administration	Minor	Revisions: Cross-listing, Offering	

		Provost	
Presenter	Reviewers	Action	Туре
Muse	Merrill, Reynolds, Rabasco	Request for New Course Prefix - SIP	New Prefix

College of Agriculture and Life Sciences (1/2)			
Presenter	Reviewers	Action	Туре
Merrill	Duggins, Walsh,	AEE 490 Seminar in Agricultural and Extension	Revisions: Changing grading method
	Hergeth	Education	
Merrill	Schaffer, Janca,	BAE 455/555 R Coding for Data Management and	New Course
	Seracino	Analysis	

	College of Agriculture and Life Sciences (2/2)		
Presenter	Reviewers	Action	Туре
Merrill	Knowles, Hessling, Reynolds	BIT 482/582 Virus Biotechnology: Pathogens to Therapeutics	New Course
Pratt Phillips	Rabasco, Zagacki, Driscoll	PB 493 Plant Biology Supervised Undergraduate Research Experience	Revisions: Title, Abbr. Title, Offering, Delivery, Credit Hours (down), Course Length, Contact Hours, Catalog Description, SLO, Student Eval
Pratt Phillips	Rucker, Harrington, Muse	PB 495 Special Topics in Plant Biology	Revisions: Title, Abbr. Title, Credit Hours (down), Contact Hours, Delivery/DELTA, SLO, Student Eval
Pratt Phillips	Seracino, Pacifici, Hergeth	Brewing Science and Technology Minor	New Minor

College of Engineering			
Presenter	Reviewers	Action	Туре
Reynolds	Schaffer, Pratt Phillips, Driscoll	BME 491 Biomedical Engineering Honors Thesis I	New Course
Reynolds	Knowles, Hergeth, Walsh	BME 492 Biomedical Engineering Honors Thesis II	New Course
Reynolds	Muse, Merrill, Pacifici	Nuclear Engineering	Revisions: Prerequisite Info
Seracino	Muse, Rucker, Janca	Request for a New Course Prefix – EED	New Prefix
Seracino	Duggins, Schaffer, Domingue	14CSCBS-14CSCCYSEC Computer Science (BS): Cybersecurity	Revisions: Remove/Add Courses
Seracino	Rabasco, Duggins, Zagacki	Biomedical Engineering Honors Program	New Honors Program

	College of Humanities and Social Sciences			
Presenter	Reviewers	Action	Туре	
Driscoll	Schaffer, Pratt Phillips, Rabasco	ENG 453 Studies in Nineteenth-Century British Literature	Revisions: Title, Abbr. Title, Offering, Delivery, Length, Contact Hours, GEP, DELTA, Requisites, Catalog Description	
Driscoll	Hessling, Duggins, Harrington	FL 211 Introduction to the French-speaking World	New Course	
Driscoll	Walsh, Muse, Janca	IS 495 Advanced Special Topics in International Studies	New Course	
Driscoll	Hergeth, Pacifici, Reynolds	LPS 304 Grant Writing	New Course	
Driscoll	Merrill, Harrington, Hessling	LPS 308 Terrorism, Political Violence and the Public Response	New Course	
Knowles	Reynolds, Schaffer, Seracino	PER 104 Elementary Persian II Conversation	New Course	
Knowles	Muse, Harrington, Rabasco	PSY 432 Human Sexuality and Intimate Relationships	New Course	
Knowles	Janca, Pacifici, Merrill	SW 307 Social Welfare Policy: Analysis and Advocacy	Revision: Abbr. Title, Offering, Delivery, Course Length, DELTA, Requisites, Catalog Description, SLO, Student Eval	
Knowles	Hergeth, Reynolds, Muse	SW 310 Human Behavior Theory for Social Work Practice	Revision: Offering, Delivery, Course Length, Contact Hours, DELTA, Prerequisites, Catalog Description, SLO, Student Eval	
Knowles	Seracino, Zagacki, Pacifici	WGS 200 Introduction to Women's, Gender, and Sexuality Studies	Revisions: Title, Abbr. Title, Offering, Delivery, Length, Contact Hours (up), GEP, Requisites, Catalog Description, SLO, Student Eval	

College of Natural Resources			
Presenter	Reviewers	Action	Туре
Pacifici	Reynolds, Schaffer, Duggins	PRT 238 Diversity and Inclusion in Recreation and Sport	Revisions: Offering, Delivery, Length, Contact Hours, GEP, Prerequisites, Catalog Description, SLO, Student Eval
Pacifici	Driscoll, Seracino, Walsh	PRT 359 Organizational Leadership in Parks, Recreation, Tourism and Event Management	Revisions: Title, Abbr. Title, Offering, Delivery Hours, Prerequisite, Catalog Description, SLO, Student Eval
Pacifici	Knowles, Zagacki, Harrington	PRT 371 Risk Management in Parks, Recreation, Tourism, and Event Management	New Proposal
Pacifici	Hessling, Rabasco, Merrill	PRT 451 Principles of Recreation Planning and Facility Development	Revisions: Offering, Length, Contact Hours, Prerequisites, SLO, Student Eval
Pacifici	Pratt Philips, Schaffer, Janca	15PRTBS-15PRTRPM Parks, Recreation and Tourism Management (BS): Recreation and Park Management	Revisions: Title, Adding/Removing Courses, Adjusting Requirements
Pacifici	Duggins, Rucker, Knowles	15PRTBS-15PRTTEM Parks, Recreation and Tourism Management (BS): Tourism and Event Management	Revisions: Title, Adding/Removing Courses, Adjusting Requirements
Pacifici	Hergeth, Janca, Zagacki	15PRTBS-15PRTPM Parks, Recreation and Tourism Management (BS): Program Management	Discontinue Concentration

	College of Sciences			
Presenter	Reviewers	Action	Туре	
Muse	Knowles, Seracino, Hergeth	CBS 461/561 Principles of Collaboration and Team Science	Revisions: Course Number, Dual Course, Grading Method	
Duggins	Hessling, Driscoll, Knowles	17BIOSCBS Biological Sciences (BS)	Revisions: Adding/Removing Courses, Confirm Elective List Courses, Increase Free Elective Hours (up)	

	University College/DASA		
Presenter	Reviewers	Action	Туре
Harrington	Seracino, Pacifici,	MUS 103 Theory and Musicianship I	Revisions: Co-requisites, Catalog
	Duggins		Description, SLO, Student Eval
Harrington	Rucker, Zagacki,	MUS 104 Theory and Musicianship Lab I	Revisions: Prerequisite/Co-requisite,
	Walsh		Catalog Description, SLO, Student Eval
Harrington	Reynolds, Knowles,	MUS 120 Introduction to Music Theory	Revisions: Delivery, Hours (up), DELTA,
	Schaffer		Catalog Description, SLO, Student Eval
Harrington	Pratt Phillips, Merrill,	MUS 153 Theory and Musicianship II	Revisions: Prerequisite/Co-requisite,
	Duggins		Catalog Description, SLO, Student Eval
Harrington	Janca, Muse, Hergeth	MUS 154 Theory and Musicianship Lab II	Revisions: Prerequisite/Co-requisite,
			Catalog Description, SLO, Student Eval
Domingue	Driscoll, Seracino,	SLC 102 Building Community Around Values-	New Course
	Rabasco	based Leadership	
Domingue	Zagacki, Schaffer,	SLC 202 / EI 202 CREATE: Carolina Regional	New Course
	Reynolds	Entrepreneurship Albright Team Experience I	
Domingue	Janca, Muse, Rucker	SLC 203 / EI 203 CREATE: Carolina Regional	New Course
		Entrepreneurship Albright Team Experience II	
Domingue	Walsh, Rucker, Pacifici	SLC 463/563    CBS 463/563 Leadership in	Revisions: Course Number, Dual Course,
		Interdisciplinary Biomedical Sciences	Grading Method, Requisites, Catalog
			Description, Student Eval
Domingue	Knowles, Pratt Phillips,	24MUM Music Minor	Revisions: Yearly Offering Changes to
	Pacifici		Required Courses

#### SLO= Student Learning Outcomes

#### Discussion:

Notes:

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- 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 <u>https://next-catalog.ncsu.edu/courseadmin/</u> and type the course prefix and number into the search bar. .



Office of Undergraduate Courses, Curricula, and Academic Standards oucc.dasa.ncsu.edu courses-curricula@ncsu.edu University College – Division of Academic and Student Affairs Campus Box 7105 211A Park Shops Raleigh, NC 27695-7105 P: 919.515.9769

#### University Courses and Curricula Committee

April 7<sup>th</sup>, 2021 Hosted Via Zoom Call to Order: 12:XX PM

#### Members Present:

Wendy Krause (Chair) Rudi Seracino (Past Chair), Shannon Pratt Philips, Melissa Merrill, James Knowles, Catherine Driscoll, Kristen Schaffer, Peter Hessling, Kanton Reynolds, Peter Janca, Lara Pacifici, Spencer Muse, Jonathan Duggins, Renee Harrington, Rob Rucker, Helmut Hergeth, Kenneth Zagacki, Jorden Rabasco, Thomas Walsh

#### Absent Members:

**Guests**: Jane Lubischer, Perry Peralta, Melissa Hendrickson, Travis Park, Carl Young, Peggy Domingue, Rico Ruffino, Adam Hartstone-Rose, Daniel Gruehn, Kelly Oten

Ex-Officio Members Present: Li Marcus, Lexi Hergeth, John Harrington, Stephany Dunstan, Kyle Pysher

#### WELCOME AND INTRODUCTIONS

- > Remarks from Chair Chair Wendy spoke about the work of the Syllabus Boilerplate subcommittee.
- Remarks from OUCCAS/DASA Li indicated the 120 credit hour approval (especially if approved for exception) and a process for changing these hours and will send a follow up email about this.
- Approval of the Minutes from March 17<sup>th</sup> 2021 <u>Approved</u> Discussion: Motion to approve by Helmut Hergeth

#### **NEW BUSINESS**

- Consent Agenda <u>Approved</u> Discussion:
- AGI 134 Trends and Culture of the Agricultural Workforce Approved with Suggestion Discussion: This new course was presented by Melissa Merrill. Member asked about "how do we measure farmworkers" and asked if this should be "how do migrant farm workers measure..." as a suggestion.
- CS 413 Plant Breeding Approved Discussion: This course was presented by Shannon Pratt Phillips.
- Agribusiness Management: Agricultural Resource Economics (AAS) 11AGBAAS Approved Discussion: This curricular action was presented by Shannon Pratt Phillips. Member checked that free electives are changing from 2 to 5 as a correction in the memo and asked for verification. The composition component should be in the degree requirements of WRT 111 and WRT 114 in the format B as a procedural confirmation.
- > Agriculture Sciences (BS) 11AGESBS Approved

Discussion: This curricular action was presented by Shannon Pratt Phillips. Members discussed the third point in the memo and confirmed this was because of ability of students to enter previously required course.

> ECI 449 MSL Senior Student Teaching Seminar – Approved pending with suggestion.

Discussion: This new course was presented by Peter Hessling. Members discussed that this should be approved pending (motion by Helmut Hergeth) to make ranges add up to 100% in the student evaluation methods and suggested making this a range. Additionally, the topic outline should have a range included in the course record outside of "see syllabus". Motion to move to approved pending and approve the course pending the updates approved.

- ECI 454 Student Teaching in English/Language Arts A Discussion: This course was presented by Peter Hessling. Member asked if students can do a full teaching load with 15 hours and it seems to be correct based on guest Carl Young's explanation. Member asked if there was feedback that impacted student grading. Motion to amend the motion to match the pending items made by Kristen Schaffer, vote combined with course vote.
- > ECI 464 Student Teaching in Social Studies Approved Pending with Suggestions

Discussion: This course was presented by Peter Hessling as approved pending based on the previous two course actions (evaluation methods and topic outline). Member suggested updating the ten weeks indicated in the catalog description to match the contact hours and suggested raising the contact hours to show these are 18 contact hours.

- Middle Grades Education (BS): Language Arts and Social Studies (13MIDEDBS- 13MIDEDLAS) Approved Discussion: This curricular action was presented by Peter Hessling. Reviewers indicated this is good and will not be impaced by the pending actions once they move through.
- ENG 361 Studies in British Poetry <u>Approved</u> Discussion: This course was presented by James Knowles.
- ENG 362 Studies in the British Novel <u>Approved</u> Discussion: This course was presented by James Knowles
- I6TSM Technical and Scientific Communication Minor <u>Approved</u> Discussion: This curricular action was presented by James Knowles.
- > ENT 402/FOR 402 Forest Entomology Approved

Discussion: This course was presented by Lara Pacifici who indicated the range suggestion for evaluation methods was discussed at her college level committee and has been noted for this and the following courses. Member from Design asked about course and asked what the expectation was about this being noted in the justification. The college of design has not has sufficient time to review the information directly relating to the design courses and would like to table this and the following motions until they have sufficient time to do so.

- <u>SMT 207 Principles of Sustainable Industrial & Product Design Lecture</u> <u>Withdrawn</u> Discussion: This new course was presented by Lara Pacifici
   <u>SMT 217 Principles of Sustainable Industrial & Product Design Lecture</u> – Discussion: This new course was presented by Lara Pacifici
   <u>SMT 307 Principles of Sustainable Industrial & Product Design Lecture</u> – Discussion: This new course was presented by Lara Pacifici
   <u>SMT 307 Principles of Sustainable Industrial & Product Design Lecture</u> – Discussion: This new course was presented by Lara Pacifici. Suggestions to adjust the student learning outcomes to make more measurable and bullet oriented in format and suggested future proofing the topic outline to more broad ranges.
- BIO 270 Introduction to Evolution Approved Discussion: This new course was presented by Spencer Muse
- 17BIOSCHB Biological Sciences: Human Biology (BS) Approved Discussion: This curricular action was presented by Spencer Muse.
- ITBIOSCBS-17BIOSCIPN Biological Sciences: Integrative Physiology and Neurobiology (BS) Approved Discussion: This curricular action was presented by Spencer Muse
- 17GEOLBS Geology (BS) Approved Pending

Discussion: This curricular action was presented by Jonathan Duggins. Member mention MAE thermodynatic option has been adjusted to a new course, if the department desires, the update could appear on the elective list. This was also true for a few other courses listed. Engineering representative will be copied on followup for exact details. Motion moved to approved pending updating the discontinued courses and updating prefix and number changed courses

> 17GM Geology Minor – Approved Pending

Discussion: This curricular action was presented by Jonathan Duggins. Reviewer asked if the minimum credit hours indicated at the top is not possible based on the class requirements these lead to 17 minimum credit hours. This function in CIM for programs will have an automatically added total. Removing the total ours from the requirement will future proof this so that the total hours are only added at the top, motion approved pending.

- ITMETBS Meteorology (BS) and 17METBS-METMAR Meteorology: Marine Sciences (BS) Approved Pending Discussion: This curricular action was presented by Jonathan Duggins. In the fifth footnote the information seems correct, but to be consistent with foot note three this should be updated to physics 208 and 209. MEA 511 is a 3 credit hour course, member asked how this will satisfy the 4 credit hour requirement with a three credit hour course, this is acceptable since they can take more than one 3 credit hour elective to fulfill the 4 credit hours.
- SIP 114 Wicked Problems, Wolfpack Solutions Approved Pending vote 13 with 3 voting against (Awaiting SIP prefix approval)

Discussion: This new course was presented by Spencer Muse. Member asked with this is graded for S/U only which may impact the GEP requirement fulfillment. Members discussed that this maybe something required which would impact all other curricula at the university, however this is not a requirement. Member asked if S/U is an option for GEP courses. Members felt that this course should not be available for repeat attempts, guest Jane Lubischer indicated the course subject topic changes each year, so students can take it more than once. Member brought attention to the lengths being 5 weeks. Members moved to approve pending the change of the number of completions allowed to 1, not repeatable for credit.

Li will research if a GEP can be S/U if that grading option is the only one available for the CUE meeting on Friday.

> <u>T 493 Internship in Textiles</u> – Approved with suggestion

Discussion: This course was presented by Helmut Hergeth. Member asked if the 99 repeats available, they set it at this because there is no limit to students who want internships. Member suggested moving 99 to 10 or 12. Member suggested updating the catalog description to remove the information about unpaid internships. This course raises the question of credit for internships and the university policy on them, in some cased internships are not paid, but also require payment to participate. Companies, particularly retail companies have refused to pay for internships in the past and this has been an ongoing discussion with university partnerships.

HON 355 Feelings of/from Technology: Analog Bodies in Digital Spaces – Approved with Suggestions Discussion: This new course was presented by Renee Harrington. Suggestion to include ranges in the evaluation methods.

Revisiting the SIP course since the prefix has not yet been approved. Course pending prefix approval and the other pending items.

UCCC Additional Seat Memo – Approved 10 yes, 4 no, 2 abstain. Motion approved by majority. Discussion: Motion to move forward with the seat representatives by Helmut Hergeth.

Discussion:

Meeting adjourned: 2:42 PM.

Respectfully submitted by Lexi Hergeth

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

#### NC STATE UNIVERSITY

- TO: Office of the Dean for Academic and Student Affairs
- FROM: Jane Lubischer, Chair, SIP Curriculum Committee
- RE: proposed SIP prefix for courses taught by faculty from multiple departments and colleges

DATE: 24 February 2021

Proposed effective date: when approved

#### Proposed changes and justification

We developed a course that (1) focuses on the value of interdisciplinarity in solving complex problems, (2) addresses a different complex problem for each incoming class of NC State students, and (3) involves contributions from faculty across campus (the specific departments represented will vary from year to year).

This course was previously approved as an IPGE offering, but before we can submit the course action through CIM, we are requesting a new prefix be created for a course that is too interdisciplinary in nature to be housed within a single department. We are in discussions about how best to house and otherwise support these sorts of courses. At this time, the best option is to create a new prefix – SIP -- using the same academic organization code used for the recently created DSC prefix. We have chosen SIP (Solving Interdisciplinary Problems) because we want any course developed under this prefix to be interdisciplinary in nature and to be problem-oriented.

Prefix: SIP

CIP code: 30.00 Multi/Interdisciplinary Studies, General Acad Org code: (Provost's office)

CIM does not allow us to save course information without a course prefix indicated, so we cannot submit the Wicked Problems, Wolfpack Solutions course for review until we have an appropriate prefix in place. In the meantime, we have a multi-college faculty committee reviewing the syllabus and will send it out to the Associate Deans for Academic Affairs for consultation.

SIGNATURES:

Jam Z Zuil

2/24/2021 Date

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Chair, SIP Curriculum Committee

Senior Vice Provost, Office of the Provost

Date

Chair, University Courses & Curricula Committee Date

PROPOSED EFFECTIVE DATE: <u>when approved</u>

APPROVED EFFECTIVE DATE: \_\_\_\_\_

Dean, Academic and Student Affairs

Date

## Routing for DASA or Graduate School Approval of Other Degree Program Actions

Type of Action: Enter "X" for Action Type(s) and list Title and Prefix(s) as indicated

XNew Minor / Concentration Proposed Minor / Concentration Title: B	Prowing Science and Technology
Change in Minor / Concentration Title	
Current Minor / Concentration Title:	
Proposed Minor / Concentration Title:	
Change in Curricular/Program Requiremer	nts
Proposed Effective Date: <u>5/1/2021</u> Proposed CIP Code): <u>41.0101</u>	Program Contact: <u>Dr. John Sheppard</u>
Routing of Action: Indicate date when the follow Completed Proposal	ving occurs

X	Department Head endorses*
<u> </u>	College Curriculum Committee (undergraduate or graduate) recommends* College Dean endorses*

### Proposal moves to Undergraduate or Graduate office for routing

 Recommended by Vice Provost, DELTA, if applies*
 Associate Deans Council or Graduate Operations Council informed
 University Courses & Curriculum Committee or Administrative Board of the Graduate School recommends
 Dean (Graduate School or DASA) approves*

\* Signature is required on the signature page for the action

# 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:

K.P. Sandeep, FBNS Department Head	4/9/2021
Head, Department/Program	Date
Recommended By:	
Junes Tark	04.12.2021
Chair, College Curriculum Committee	Date
Endorsed By:	4/12/2021
College Dean	Date
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	

#### NORTH CAROLINA STATE UNIVERSITY UNDERGRADUATE CURRICULUM ACTION FORM **Academic Minor**

DEPARTMENT(S):	TYPE OF PROPOSAL:	
Food, Bioprocessing and Nutrition Sciences	New Minor:	<u>X</u>
TITLE OF THE MINOR:	Revision to Minor:	
Brewing Science and Technology	Discontinuation:	

PROPOSED EFFECTIVE DATE: \_\_\_\_\_ 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
- Administration of the Minor (Contact information for Administrator of the Minor) 5.
- Requirements for Admission and Completion of the Minor 6.
- 7. Statement on Other Departments Likely to be Affected and Summary of Consultations with those Departments
- 8. Optional: Projected Resources and Enrollment

#### **REQUIRED SIGNATURES:**

#### OTHER REQUIRED SIGNATURES AS NEEDED:

( and and	4/9/2021	
Head, Department/Papgram	Date	
Juno Tank	04.12.2021	
Chair, College Curriculum Committee	Date	Chair, College Curriculum Committee
ho m no lot	4/12/2021	
College Dean	Date	College Dean

Chair, University Courses & Curricula Committee Date

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

Date

#### **Proposed Minor in Brewing Science and Technology**

#### 1. Statement of Justification

NCSU entered into a licensing agreement with New Belgium Brewing in 2019 to allow production of "Old Tuffy" lager using the iconic "Old Tuffy" logo owned by NCSU. As part of this agreement, New Belgium provides annual funding to the University for a minimum of 5 years, part of which has been designated by the Provost for use in establishing a minor in Brewing Science within the Department of Food, Bioprocessing and Nutrition Sciences. North Carolina has seen a roughly 450% growth in the number of breweries since 2011, representing an economic impact of \$2.8B in 2019, yet only 5 community colleges and 1 University in the UNC system (Appalachian State University) offer programs in Brewing Science. It is prudent for NCSU to offer specific instruction in this field to further support the growth of this industry in our state. As home of the UNC system's only licensed production brewery, implementation of a minor in Brewing Science housed in FBNS is completely consistent with the mission of both the University and the Department. This would offer another minor in the Department overlapping, but distinct from, the minor in Food Science, in that it incorporates courses within the Food Science curriculum but concentrates specifically on brewing and the brewing industry.

#### 2. Statement of Academic Minor Program Objectives

The objectives of the proposed minor in Brewing Science and Technology at NCSU are:

- To educate students on the scientific principles of the brewing process, including the chemistry, biochemistry, microbiology and engineering aspects that are relevant to modern brewery operation
- Provide an understanding of the day-to-day operations of beer production facilities, related to quality control, yield, and efficiency, while minimizing costs with specific reference to the craft industry
- Prepare students for a career in brewing and related fermentation industries

#### 3. List of Courses Constituting the Proposed Minor

#### Requirements

Students must complete a minimum of 15 credits from the list provided below and a grade of C- or better in each course.

#### Required Courses (9 credit hours)

- BBS/FS 325 Introduction to Brewing Science and Technology (3 credit hours)
- BBS/FS 326 Brewing Practices and Analyses (3 credit hours)
- BBS/FS 427 Brewing Equipment, Controls and Operations (3 credit hours)

#### Elective Courses (6 credit hours)

- FS 231 Principles of Food and Bioprocess Engineering (4 credit hours)
- FS 250 Basics of Food Safety and Quality (3 credit hours)
- FS 352 Introduction to Microbiological Food Safety Hazards (3 credit hours)
- FS 354 Food Sanitation (3 credit hours)
- FS 402 Chemistry of Food and Bioprocessed Materials (4 credit hours)

- FS/MB 405 Food Microbiology (3 credit hours)
- FS 403 Analytical Techniques in Food and Bioprocessing Science (4 credit hours)
- FS 416 Quality Control in Food and Bioprocessing (3 credit hours)
- FS 453 Food Laws and Regulations (3 credit hours)

#### 4. Catalog Description of Proposed Minor

The minor in Brewing Science and Technology is available to all undergraduates in all majors. The minor aims to educate students on the aspects of chemistry, biochemistry, microbiology and engineering that are relevant to the brewing industry in North Carolina and elsewhere. This program would concentrate specifically on the scientific principles involved in the daily and long-term operation of breweries of all sizes, but particular focus on the craft beer sector. The focus and breadth of this minor should have significant appeal to all students interested in employment opportunities within the brewing or related fermentation industries. Graduates of this program will be fully prepared to start their career in the brewing industry in a job related to production or QA/QC operations.

#### 5. Administration of the Minor

The coordinator for the proposed minor will be Dr. John Sheppard. Dr. John Sheppard 129F Schaub Food Science Building 919.513.0802 jdsheppa@ncsu.edu

#### 6. Requirements for Admission and Completion of the Minor

#### Admissions

Students may declare their desire to complete the Brewing Science and Technology minor by applying through CODA. Students will be assigned an advisor to help them in selecting coursework for the minor.

#### Certification

Dr. Sheppard will certify the minor 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 certification should be completed no later than during the registration period for the student's final semester at NC State.

#### Contact Person

Dr. John Sheppard Professor and Director of Undergraduate Programs for Bioprocessing Science 129F Schaub Food Science Building 919.513.0802 jdsheppa@ncsu.edu

#### 7. <u>Statement on Other Departments Likely to be Affected and Summary of Consultations with</u> those Departments

All courses are taught within the Department of Food, Bioprocessing and Nutrition Sciences.

#### 1. Statement of Justification

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- Prepare students for a career in brewing and related fermentation industries
- 3. List of Courses Constituting the Proposed Minor

#### **Requirements**

Students must complete a minimum of 15 credits from the list provided below and a grade of C- or better in each course.

Required Courses (9 credit hours)

- BBS/FS 325 Introduction to Brewing Science and Technology (3 credit hours)
- BBS/FS 326 Brewing Practices and Analyses (3 credit hours)
- BBS/FS 427 Brewing Equipment, Controls and Operations (3 credit hours)

#### Elective Courses (6 credit hours)

- FS 231 Principles of Food and Bioprocess Engineering (4 credit hours)
- FS 250 Basics of Food Safety and Quality (3 credit hours)

- FS 352 Introduction to Microbiological Food Safety Hazards (3 credit hours) FS 354 Food Sanitation (3 credit hours)
- FS 402 Chemistry of Food and Bioprocessed Materials (4 credit hours)
- FS/MB 405 Food Microbiology (3 credit hours)
- FS 403 Analytical Techniques in Food and Bioprocessing Science (4 credit hours)
- FS 416 Quality Control in Food and Bioprocessing (3 credit hours)
- FS 453 Food Laws and Regulations (3 credit hours)

#### 4. Catalog Description of Proposed Minor

The minor in Brewing Science and Technology is available to all undergraduates in all majors. The minor aims to educate students on the aspects of chemistry, biochemistry, microbiology and engineering that are relevant to the brewing industry in North Carolina and elsewhere. This program would concentrate specifically on the scientific principles involved in the daily and long-term operation of breweries of all sizes, but particular focus on the craft beer sector. The focus and breadth of this minor should have significant appeal to all students interested in employment opportunities within the brewing or related fermentation industries. Graduates of this program will be fully prepared to start their career in the brewing industry in a job related to production or QA/QC operations.

#### 5. Administration of the Minor

The coordinator for the proposed minor will be Dr. John Sheppard. Dr. John Sheppard 129F Schaub Food Science Building 919.513.0802 jdsheppa@ncsu.edu

#### 6. Requirements for Admission and Completion of the Minor

#### Admissions

Students may declare their desire to complete the Brewing Science and Technology minor by applying through CODA. Students will be assigned an advisor to help them in selecting coursework for the minor.

#### Certification

Dr. Sheppard will certify the minor 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 certification should be completed no later than during the registration period for the student's final semester at NC State. Contact Person

Dr. John Sheppard Professor and Director of Undergraduate Programs for Bioprocessing Science 129F Schaub Food Science Building 919.513.0802 idsheppa@ncsu.edu

# 7. <u>Statement on Other Departments Likelv to be Affected and Summary of Consultations with those Departments</u>

All courses are taught within the Department of Food, Bioprocessing and Nutrition Sciences.

#### Routing for DASA or Graduate School Approval of Other Degree Program Actions

**Type of Action:** Enter "X" for Action Type(s) and list Title and Prefix(s) as indicated

	New Minor / Concentration
	Proposed Minor / Concentration Title
	Change in Minor / Concentration Title
	Current Minor / Concentration Title:
	Proposed Minor / Concentration Title:
_X_	Change in Curricular/Program Requirements

Proposed Effective Date: <u>8/2021</u> Program Contact: <u>Kimberly A. Bush- Director of</u> <u>Undergraduate Programs- Parks, Recreation and Tourism Management- kabush@ncsu.ed</u> Proposed CIP Code (see <u>https:// nces.ed.gov/ipeds/cipcode/default.aspx?y=55)</u>: <u>31.0301</u>

#### Routing of Action: Indicate date when the following occurs

Completed Proposal

- 4/1/2021 Department Head endorses\*
- 4/2/2021 College Curriculum Committee (undergraduate or graduate) recommends\*
- 4/2/2021 College Dean endorses\*

#### Proposal moves to Undergraduate or Graduate office for routing

- \_\_\_\_\_ Recommended by Vice Provost, DELTA, if applies\*
- Associate Deans Council or Graduate Operations Council informed
- \_\_\_\_\_ University Courses & Curriculum Committee or Administrative Board of the Graduate School recommends
- \_\_\_\_\_ Dean (Graduate School or DASA) approves\*

\* Signature is required on the signature page for the action

#### 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** 

4-1-21 Head, Department/Program Date

**Recommended By:** 

Chair, College Curriculum Committee

Endorsed By:	
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Rask	uneli
College Dean	

#### College Dear

#### 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	<u>.</u>
Approved By:		
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Dean, DASA or the Graduate School

Endorsed	By:	^
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April 2, 2021

Date

April 2, 2021

Date



**College of Natural Resources** Parks, Recreation and Tourism Management

cnr.ncsu.edu/prtm

Campus Box 8004 2820 Faucette Drive Raleigh, NC 27695-8004 P: 919.515.3276

Date: February 27, 2021

To: College of Natural Resources Curriculum Committee

From: Kimberly A. Bush, Director of Undergraduate Programs- PRTM.

Killing A. Bis

Re: Proposed Curriculum Actions for Parks, Recreation and Tourism Management

The following proposed curriculum actions have been reviewed and approved by the faculty of Parks, Recreation and Tourism Management, November, 2020.

The following curriculum actions are proposed:

- 1. Concentration title revision for two concentration options in PRTM and revision of concentration requirements;
- 2. Curriculum revision for undergraduate degree Parks, Recreation and Tourism Management (PRTM) and revision of several course titles;
- 3. Discontinuation of one concentration (Program Management)

### **Concentration Title & Required Courses Revisions**

Parent Degree: Parks, Recreation and Tourism Management SIS code: 15PRT CIP code: 31.0301

Proposed Concentration Title Changes:

- 1. Current: Sustainable Tourism. Proposed: Tourism and Event Management
  - a. SIS code: 15PRM
  - b. CIP code: 31.0301
- 2. Current: Parks and Natural Resource Recreation. Proposed: Recreation and Park Management
  - a. SIS code: 15PRM
  - b. CIP code: 31.0301
- 3. Curriculum requirement changes

#### Current Concentration Requirements

#### Sustainable Tourism (18 credits)

PRT 419 Sustainable Tourism PRT 420 Destination Planning and Management PRT 430 Tourism, Poverty, and Health ACC 200 Introduction to Managerial Accounting OR MIE 201 Introduction to Business Processes Concentration Electives (advised electives) (6 cr)

#### Parks and Natural Resource Recreation (18 credits)

PB 360 Ecology (4 cr) PRT 351 Outdoor Consortium PRT 442 Recreation and Park Interpretive Services GIS 280 Introduction to GIS Concentration Electives (advised electives) (5 cr)

#### Proposed Concentration Requirements (proposed changes in red):

Tourism & Event Management (15 credits) Pick 5 of the following 8 courses:

PRT 250: Management of Park and Recreation Facilities Suggested: Facilities Management in Parks, Recreation, Tourism and Event Management

- PRT 307 (was 407): Services, Facilities and Event Marketing
- PRT 319 (was 419): Sustainable Tourism
- PRT 410: Food + Beverage Management
- PRT 420: Destination Planning & Management PRT 152 Prereq
- PRT 430: Tourism, Poverty, and Health
- PRT 452- (was 351): Outdoor Consortium. Suggested: Field Experience in Nature Based Recreation & Tourism Management
- PRT 458: Special Events Planning -- PRT 358 Prereq

<u>Recreation & Park Management</u> (15 credits) Pick 5 of the following 8 courses:

PRT 214: Introduction to Adventure Education

- PRT 250: Management of Park and Recreation Facilities. Suggested: Facilities Management in Park, Recreation, Tourism and Event Management
- PRT 307 (was 407): Services, Facilities and Event Marketing
- PRT 342 (was 442): Recreation & Park Interpretive Services
- PRT 415 (was 215): Principles + Practices of Outdoor Leadership
- PRT 451: Principles of Recreation Planning and Facility Development

 PRT 452 (was 351): Outdoor Consortium. Suggested: Field Experience in Nature Based Recreation & Tourism Management
 PRT 485 (was 385): Environmental Education in Practice

#### **Justification**

Enrollments in the Sustainable Tourism and Parks and Natural Resource Recreation concentrations have been declining for the past 10 years despite significant recruitment activities (See Appendix A). Over the past year, the PRTM Undergraduate Program Advisory Committee (UPAC) has completed a comprehensive assessment of our undergraduate programs, a representative survey of prospective high school students and parents of prospective students, co-led a study surveying PRTM Department Heads across Canada and the US, and consulted with peer institutions offering similar degree options. Additionally, in 2019, a focus group with invited event management professionals was conducted to determine how our current undergraduate program might align with opportunity areas within event management industries, given the increased interest in this career among our current students.

The results of these efforts indicated that current concentration options in the PRTM degree plan could be better positioned to reflect student interest and capitalize on the teaching strengths of faculty hired since the last curriculum revision. Findings from the survey, results of a focus group with industry professionals, and consultations with several peer institutions were supportive of changing the Sustainable Tourism concentration to include a focus on Event Management. Similarly, the Parks and Natural Resource Recreation concentration title was not reflective of student interest in Park Management, Outdoor Adventure Recreation, and Environmental Education.

The recommended concentration option changes are made with the recognition that additional resources to support new courses or initiatives are unlikely, at least in the short term. Thus, the proposed actions below have been developed to strategically use current resources.

The recommendations included in this proposal have been thoroughly vetted with all faculty in PRTM. In addition to open discussions and deliberations at faculty meetings, faculty were provided with a Google form to provide anonymous input, and individual consultations were made available to ensure that all voices were heard. A vote of the proposed changes was passed unanimously by all faculty.

We are confident the proposed recommendations align better with current and future student interests and career goals.

#### **Curriculum Revision & Course Title Changes**

<u>Degree</u>: Parks, Recreation and Tourism Management

SIS code: 15PRT CIP code: 31.0301

#### Current Course Requirements:

PRT 150: Parks, Recreation and Tourism Management Orientation (1 cr) PRT 152: Introduction to Parks, Recreation and Tourism Management PRT 220: Commercial Recreation and Tourism Management PRT 238: Diversity and Inclusion in Recreation and Sport PRT 240: Geospatial Applications for Parks, Recreation and Tourism PRT 250: Management of Park and Recreation Facilities PRT 350: Outdoor Recreation Management COM 110 Public Speaking OR COM 112 Interpersonal Communication Select one of the following: ARE 201 Introduction to Agricultural & Resource Economics ARE 201A Introduction to Agricultural & Resource Economics EC 201 Principles of Microeconomics EC 205 Fundamentals of Economics PRT 358: Recreation Program Planning (4 cr) PRT 359: Leadership and Supervision in Recreation PRT 375: Professional Development and Internship Preparation (2 cr) PRT 380: Analysis and Evaluation in Parks, Recreation, & Tourism Select one of the following: BUS 350 Economics and business Statistics ST 311 Introduction to Statistics ST 350 Economics and Business Statistics PRT 451 Principles of Recreation Planning and Facility Development PRT 454: Parks and Recreation Finance and Administration in PRT 475: Recreation and Park Internship (8 cr)

Total Hours = 61

### Proposed Course Requirement Changes (Course name changes in red):

PRT 150: Parks, Recreation and Tourism Management Orientation (1 cr) Suggested: Recreation, Sport, Tourism and Event Management Orientation

PRT 152: Introduction to Parks, Recreation and Tourism Management Suggested: Introduction to Parks, Recreation, Tourism and Event Management

PRT 220: Commercial Recreation and Tourism Management Suggested Name Change: Foundations of Tourism & Event Management PRT 238: Diversity and Inclusion in Recreation and Sport (<u>remove PRT 152</u> <u>Prerequisite; suggested: modify course description to not specify 10 hours of</u> <u>volunteer service</u>)

PRT 240: Geospatial Applications for Parks, Recreation and Tourism Suggested: Geospatial Applications in Parks, Recreation, Tourism and Event Management

PRT 350: Outdoor Recreation Management

Suggested Name Change: PRT 230 - Foundations of Outdoor Recreation Management

PRT 358: Recreation Program Planning (4 cr)

<u>PRT 359</u>: Leadership and Supervision in Recreation (<u>remove PRT 250</u> <u>Prerequisite</u>)

Suggested Name Change: Organizational Leadership in Parks, Recreation, Tourism and Event Management

PRT 371: Risk Management in Parks, Recreation, Tourism and Event Management

PRT 375: Professional Development and Internship Preparation (2 cr)

PRT 380: Analysis and Evaluation in Parks, Recreation, & Tourism Suggested Name Change: Evidence-based decision making in Recreation, Sport, Tourism, and Event Management

PRT 454: Parks and Recreation Finance and Administration Suggested Name Change: Finance and Economics of Parks, Recreation, Tourism, and Event Management

PRT 475: Recreation and Park Internship (8 cr)

Total Hours = 42

**Concentration required hours = 15** 

Total Hours (Core classes + Concentrations) = 57

(Additional) Required Courses / Gen Eds ~~ NOTE: some of the courses we require for major are required university General Education courses:

Math Elective (3) ENG 101 (4) COM 110 or COM 112 (3) Econ (3) Statistics (3)

Humanities (6) Social Science Elective (3) GEP Natural Sciences (7) Fitness & Wellness - HESF 100 Level (1) Health & Exercise Science (1)

Additional Breadth (3) Interdisciplinary Perspectives (5) (6 cr of IP)

<u>University required co-requisites:</u> US Diversity = PRT 238 GEP Global Knowledge (0) Foreign Language Proficiency (at 102 level)

GEN EDs = 42 credits + 57 PRT (core + concentration) credits = **99 (prescribed)** credits

**FREE ELECTIVES: 21 credits** 

Total Credits = 120

#### **Discontinuation of Concentration**

Due to continuing low enrollments and findings outlined above we propose the discontinuation of the Program Management concentration in PRTM, often cited as too general a description title by our students. The proposed Tourism & Event Management concentration has incorporated several aspects of this concentration in proposed course requirements.

# State whether revision impacts other programs or departments, include/attach consultation correspondence if applicable

Given that no new courses are proposed and that proposed changes are more of a realignment of current course offerings to meet current prospective student interests, we do not anticipate any impact on other programs or departments at NCSU.

# Statement on how the revision will impact current students in the program. If no impact, please state.

Current PRTM students will be given the option of transferring into one of the new concentrations or completing their degree under their current degree and sub plan.

### Proposed effective date for title change

Fall 2021

	Program Mgmt	Parks/Natural Resources	Tourism & Commercial Rec	Sustainable Tourism	Total
2010 Fall	122	41	67		230
2011 Spring	136	40	65		241
2011 Fall	149	39	60		248
2012 Spring	162	29	55		246
2012 Fall	179	29	46		254
2013 Spring	174	36	45		255
2013 Fall	174	30	46		250
2014 Spring	161	33	48		242
2014 Fall	155	30	43		228
2015 Spring	143	25	37		205
2015 Fall	131	25	30		186
2016 Spring	117	20	26		163
2016 Fall	111	25	30		166
2017 Spring	104	29	25	7	165
2017 Fall	86	39	16	19	160
2018 Spring	77	40	15	21	153
2018 Fall	63	35	8	29	135
2019 Spring	49	34	8	27	118
2019 Fall	52	30	2	29	113
2020 Spring	44	30	2	35	111
2020 Fall	50	39	0	29	118

## Appendix A - PRTM Enrollment Data by Concentration

### **Appendix B: Survey Results**

**High school parent and student data** - A qualtrics panel survey was sent to a North Carolina representative sample of 350 high school students (16-18) and 350 parents of high school students in June 2020. The purpose was to gauge their perception of an undergraduate degree in PRTM and look at the ways in which they research and make decisions about an undergraduate degree. Event Planning was the option that both High School students and parents perceived as the most viable degree choice. One final point: 60% of parents stated that they were very interested or somewhat interested and 47% of students were very interested or somewhat interested and PRTM degree.

#### **HIGH SCHOOL STUDENTS**

- **a.** Event Planning (39% of High School students felt it would be a great option 4 or 5 on a 5 point scale)
- b. Hospitality Mgt (35% of High School students felt it would be a great option 4 or 5 on a 5 point scale)
- **C.** Adventure and Recreation Mgt (30% of High School students felt it would be a great option 4 or 5 on a 5 point scale)
- d. Tourism (28% of High School students felt it would be a great option 4 or 5 on a 5 point scale)
- Parks and Natural Resources (23% of High School students felt it would be a great option 4 or 5 on a 5 point scale)
- f. Public Recreation (20% of High School students felt it would be a great option 4 or 5 on a 5 point scale)

#### **HIGH SCHOOL PARENTS**

- **g.** Event Planning (34.5% of HS parents felt it would be a great option for their child 4 or 5 on a 5 point scale)
- h. Public Recreation (34% of HS parents felt it would be a great option for their child 4 or 5 on a 5 point scale)
- i. Adventure and Recreation Mgt (34% of HS parents felt it would be a great option for their child4 or 5 on a 5 point scale)
- j. Parks and Natural Resources (32% of HS parents felt it would be a great option for their child 4 or 5 on a 5 point scale)
- k. Hospitality Mgt (31% of HS parents felt it would be a great option for their child 4 or 5 on a 5 point scale)
- I. Tourism (29% of HS parents felt it would be a great option for their child 4 or 5 on a 5 point scale)

#### FORMAT A (SEMESTER-BY-SEMESTER CURRICULUM DISPLAY)

Proposed:

Indicate display status: Current:

x <u>Proposed</u> Effective Semester: Fall 2021

Degree/Plan Title: Parks, Recreation and Tourism Management Plan SIS Code: 15 Concentration/Subplan Title: Recreation and Park Management Subplan SIS Code: 15PRTRPM

<u>New Degree Audit required</u>? (**Y** or N)

<u>Critical Path Courses</u> - 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	
PRT 150 Recreation, Sport, Tourism, & Event Mgmt. Orientation	1	PRT 220 Foundations of Tourism and Event Mgmt.	3	
PRT 152 Intro. To Parks, Rec., Tourism, & Event Mgmt.	3	PRT 238 Diversity & Inclusion in Recreation & Sport	3	
ENG 101 Academic Writing and Research	4	*** *** GEP Requirement	3	
MA *** Mathematics Elective	3	*** *** GEP Requirement *** *** GEP Requirement	3	
*** *** GEP Requirement	4	HES 10* Fitness & Wellness Course	1	
	Total: 15		Total:16	
	SOPHON	IORE YEAR		
FALL SEMESTER	CREDITS	SPRING SEMESTER	CREDITS	
PRT 230 Foundations of Outdoor Recre. Mgmt.	3	*** *** Concentration	3	
PRT 240 Geospatial Applications in Parks, Rec., Tourism, and Event Mgmt.	3	EC (ARE 201, ARE 201A, EC 201 or EC 205)	3	
*** *** GEP Requirement	3	*** *** GEP Requirement *** *** Interdisciplinary GEP Requirement	3	
COM 110 Public Speaking (or Com 112)	3	*** *** Free Electives	3	
*** *** Free Electives	3			
	Total:15		Total:15	
	JUNIO	⊥ R YEAR		
FALL SEMESTER	CREDITS	SPRING SEMESTER	CREDITS	
PRT 359 Organ. Leadership in Parks, Rec., Tourism, and Event Mgmt.	3	PRT 358/358L Recreation Program Planning	4	
PRT 371 Risk Mgmt in Parks, Rec., Tour., & Events	3	PRT 380/380L Evidence-based Decis. Making in Rec., Sport, Tourism and Event Mgmt.	3	

			Revised 1/2013
ST 311 Intro. to Statistics	3	*** *** GEP Requirement- Interdisciplinary Perspective	2-3
PRT 375 Professional Development. & Internship	2		
Preparation		HES *** Phys.Ed/Healthy Living Course	1
*** *** Concentration	3	*** *** Free Electives	6
	Total: 14		Total: 16
SUMMER SESSION 10 WEEKS	CREDITS		
PRT 475 Recreation and Park Internship	8		
	SENIC	DR YEAR	
FALL SEMESTER	CREDITS	SPRING SEMESTER	CREDITS
PRT 454 Finance and Econ. of Parks, Rec., Tourism, and Event Mgmt.	3	*** *** Concentration	3
		*** *** Free Electives	6
*** *** Concentration	6		
*** *** Free Electives	3		
	Total: 12		Total: 9
Minimum C	redit Hours Red	quired for Graduation <sup>*</sup> : 120	

#### Major/Program Footnotes:

#### \*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 <u>http://www.ncsu.edu/uap/academic-standards/gep/courselists/index.html</u>.

#### A. <u>Mathematical Sciences</u> (6 credit hours – one course with MA or ST prefix)

Choose from the University approved GEP Mathematical Sciences course list or the following course(s) if completed as part of the Major requirements may fulfill part or all of this requirement:

<u>B.</u> <u>Natural Sciences</u> (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:

<u>C.</u> <u>Humanities</u> (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:

<u>D.</u> <u>Social Sciences</u> (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:

<u>Physical Education/Healthy Living</u> (2 credit hours – at least one 100-level Fitness and Wellness Course)

Choose from the University approved GEP Physical Education/Healthy Living course list.

<u>Additional Breadth</u> - (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

<u>G.</u> 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:

L. 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) corequisite. The following course(s) completed as part of the Major requirements may fulfill this requirement:

#### Revised 1/2013

#### <u>J.</u> 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: <u>Foreign Language proficiency</u> - Proficiency at the FL\_102 level is required for graduation.

#### FORMAT A (SEMESTER-BY-SEMESTER CURRICULUM DISPLAY)

Indicate display status:	Current:	Proposed:	х	Proposed Effective Semester:	Fall 2021
maleate alopiay status.	carrente	i i oposea.	~	<b><u>Encourte</u></b> Semestern	1011 2021

<u>Degree/Plan Title</u>: Parks, Recreation and Tourism Management <u>Plan SIS Code</u>: 15 <u>Concentration/Subplan Title</u>: Tourism and Event Management <u>Subplan SIS Code</u>: 15PRTTEM

<u>New Degree Audit required</u>? (Y or N)

<u>Critical Path Courses</u> - 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	
PRT 150 Recreation, Sport, Tourism, & Event Mgmt. Orientation	1	PRT 220 Foundations of Tourism and Event Mgmt. PRT 238 Diversity & Inclusion in Recreation &	3	
PRT 152 Intro. to Parks, Rec., Tourism, & Event Mgmt.	3	Sport	2	
ENG 101 Academic Writing and Research	4	*** *** GEP Requirement	3	
MA *** Mathematics Elective	3	*** *** GEP Requirement	3	
our nequirement	-	HES 10* Fitness & Wellness Course	1	
	Total: 15		Total:16	
	CREDITS	SFILING SEMILSTER	CREDITS	
PRT 230 Foundations of Outdoor Recre. Mgmt.	3	*** *** Concentration	3	
PRT 240 Geospatial Applications in Parks, Rec., Tourism, and Event Mgmt.	3	EC (ARE 201, ARE 201A, EC 201 or EC 205)	3	
*** *** GEP Requirement	3	*** *** GEP Requirement	3	
COM 110 Public Speaking (or Com 112)	3	*** *** Free Electives	3	
*** *** Free Electives	3			
	Total:15		Total:15	
			0050170	
FALL SEMESTER	CREDITS	SPRING SEMESTER	CREDITS	
PRT 359 Organ. Leadership in Parks, Rec., Tourism, and Event Mgmt.	3	PRT 358/358L Recreation Program Planning	4	
PRT 371 Risk Mgmt in Parks, Rec., Tour., & Events	3	PRT 380/380L Evidence-based Decis. Making in Rec., Sport, Tourism and Event Mgmt.	3	

			Revised 1/2013		
ST 311 Intro. to Statistics	3	*** *** GEP Requirement- Interdisciplinary Perspective	2-3		
PRT 375 Professional Development. & Internship	2				
Preparation		HES *** Phys.Ed/Healthy Living Course	1		
*** *** Concentration	3	*** *** Free Electives	6		
	Total: 14		Total: 16		
SUMMER SESSION 10 WEEKS	CREDITS				
PRT 475 Recreation and Park Internship	8				
SENIOR YEAR					
FALL SEMESTER	CREDITS	SPRING SEMESTER	CREDITS		
PRT 454 Finance and Econ. of Parks, Rec., Tourism, and Event Mgmt.	3	*** *** Concentration	3		
		*** *** Free Electives	6		
*** *** Concentration	6				
*** *** Free Electives	3				
	Total: 12		Total: 9		
Minimum C	redit Hours Rec	quired for Graduation <sup>*</sup> : 120			

#### Major/Program Footnotes:

#### \*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 <u>http://www.ncsu.edu/uap/academic-standards/gep/courselists/index.html</u>.

#### A. <u>Mathematical Sciences</u> (6 credit hours – one course with MA or ST prefix)

Choose from the University approved GEP Mathematical Sciences course list or the following course(s) if completed as part of the Major requirements may fulfill part or all of this requirement:

<u>B.</u> <u>Natural Sciences</u> (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:

<u>C.</u> <u>Humanities</u> (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:

<u>D.</u> <u>Social Sciences</u> (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:

<u>Physical Education/Healthy Living</u> (2 credit hours – at least one 100-level Fitness and Wellness Course)

Choose from the University approved GEP Physical Education/Healthy Living course list.

<u>Additional Breadth</u> - (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

<u>G.</u> 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:

L. 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) corequisite. The following course(s) completed as part of the Major requirements may fulfill this requirement:

#### <u>J.</u> 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: <u>Foreign Language proficiency</u> - Proficiency at the FL\_102 level is required for graduation.

#### **College of Natural Resources, NCSU** Parks, Recreation, and Tourism Management Department Parks, Recreation and Tourism Management **Effective: 08/2018**

			FRESH	MAN YEAR		
	FALL SEMESTER CREDITS SPRING SEMESTER		CREDITS			
PRT	150	Parks, Rec.& Tourism Mgt. Orient.	1	PRT 220 Commercial Rec. & Tourism Mgt.	3	
PRT	152	Intro. to Parks, Rec. and Tourism <sup>1</sup>	3 (CP)	PRT 238 Div. & Inclusion in Park, Rec. & Sport <sup>1</sup>	3	
ENG	101	Academic Writing and Research <sup>1,H</sup>	4	*** *** GEP Requirement*	3	
MA	***	Mathematics Elective <sup>2,A</sup>	3	*** *** GEP Requirement*	3	
***	***	GEP Requirement*	4	*** *** GEP Requirement*	3	
				HESF 1** Fitness & Wellness Course* <sup>E</sup>	1	
			Total:15		Total:16	
			SOPHO	MORE YEAR		
		FALL SEMESTER	CREDITS	SPRING SEMESTER	CREDITS	
PRT	250	Mgt. of Park & Rec. Facilities	3	PRT 350/350L Outdoor Recreation Mgt.	3	
PRT	240	Geospatial Applications in Parks,	3	*** *** Concentration <sup>3</sup>	6	
Recre	ation a	and Tourism		*** *** GEP Requirement*	3	
EC	205	Economics(or EC 201 or ARE 201)*D	3	*** *** Interdisciplinary GEP Requirement*	2-3	
***	***	GEP Requirement*	3			
СОМ	110	Public Speaking (or Com 112)	3			
			Total:15		<i>Total:</i> 14-15	
ļ			JUNI	OR YEAR		
		FALL SEMESTER	CREDITS	SPRING SEMESTER	CREDITS	
PRT	359	Leadership & Super. In PRT <sup>1</sup>	3 (CP)	PRT 358/358L Recreation Program Planning	4	
ST	311	Intro. to Statistics <sup>A</sup>	3	*** *** Free Electives <sup>4</sup>	6	
PRT	375	Professional Development &	2	*** *** GEP Requirement*	3	
Interr	nship			PRT 380/380L Analysis & Evaluation in P and R <sup>1</sup>	3 (CP)	
***	***	Concentration <sup>3</sup>	6			
HES	***	Health & Exercise Studies Course* <sup>E</sup>	1			
			Total:15		Total:16	
			Summer Ses	sion – 10 weeks		
		PRT 475	5 – Recreation an	d Park Internship – 8 credits		
			SENI	OR YEAR		
		FALL SEMESTER	CREDITS	SPRING SEMESTER	CREDITS	
PRT 4	51	Prin. Of Rec. Planning & Fac. Dev.	3	PRT 454 Parks & Rec. Finance & Administration	3	
***	***	Concentration <sup>3</sup>	6	*** *** Free Electives <sup>4</sup>	9	
			Total: 9		Total:12	
1	Minimum Credit Hours Required for Graduation*: 120					

#### Major/Program Footnotes:

1 Minimum grade of C-

2 Select one course from the following: MA 105, MA 107, MA 111, MA 114, OR MA 121

3 See the online degree (<u>http://www.ncsu.edu/registrar/curricula/index.html</u>) for concentration courses.
4. A maximum of 12 credit hours of free electives can be taken for credit only.

#### \*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://oucc.ncsu.edu/gep-courses.

- <u>A.</u> Mathematical Sciences (6 credit hours - one course with MA or ST prefix) Fulfilled as part of the Major requirements . Select one course from the following: MA 105, MA 107, MA 111, MA 114, OR MA 121 and ST 311 or ST 350 В.
- Natural Sciences (7 credit hours include one laboratory course or course with a lab) Choose from the University approved GEP Natural Sciences course list.
- <u>C.</u> Humanities (6 credit hours selected from two different disciplines/course prefixes) Choose from the University approved GEP Humanities course list.
- <u>D.</u> Social Sciences (6 credit hours selected from two different disciplines/course prefixes) Choose 3 credits from the University approved GEP Social Sciences course list in a discipline other than Economics. Economics 205 (or EC 201 or ARE 201) is taken as part of the Major requirements and satisfies 3 credit hours needed to fulfill the GEP Social Sciences requirement.
- E. Physical Education/Healthy Living (2 credit hours - at least one 100-level Fitness and Wellness Course) Choose from the University approved GEP Physical Education/Healthy Living course list.
- <u>F.</u> Additional Breadth - (3 credit hours to be selected from the following checked University approved GEP course lists)
- X Humanities/Social Sciences/Visual and Performing Arts or Mathematical Sciences/Natural Sciences/Engineering <u>G.</u> Interdisciplinary Perspectives (5-6 credit hours)
- Choose 5 credits from the University approved GEP Interdisciplinary Perspectives course list. Н.
- 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:

#### <u>I.</u> 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.

<u>J.</u> 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.

K. Foreign Language proficiency - Proficiency at the FL 102 level is required for graduation.

## Parks, Recreation and Tourism Management Park and Natural Resource Recreation Concentration

Prepares students for positions in planning, protecting, managing, and maintaining parks and other natural resource oriented areas at the federal, state, regional or local levels and in settings ranging from primitive to urban. Courses taken below cannot be used to satisfy both general educations requirements and concentration requirements.

#### **Required Courses:** (13 hours)

	PB/AEC 360	Introduction to Ecology $3(3-0)$ prerequisite – a 100-level biology course (which should be selected to meet a natural science general education requirement if possible)
	PRT 351	Outdoor Consortium 3(3-0-0) (Spring only with required week-long field experience in March)
	PRT 442	Recreation and Park Interpretive Services 3(2-3) (Spring only)
	GIS 280	Introduction to Geographic Information Systems 3(3-0-0)
Conce	ntration Elect	ive Courses: (5 hours)
	ARE/EC 336	Introduction to Resource and Environmental Economics
	CS 200	Introduction to Turfgrass Management
	CS 210	Lawns and Recreational Turfgrass
	EC 336	Introduction to Resource and Environmental Economics
	FOR 220	Urban and Community Forestry
	FOR 252	Introduction to Forest Science
	FOR 339	Dendrology
	FOR/NR 420	Watershed and Wetlands Hydrology
	FOR/NR 520	Watershed and Wetlands Hydrology
	FW 221	Conservation of Natural Resources
	FW 353	Wildlife Management
	FW 403	Urban Wildlife Management
	HESM/PRT 2	14 Introduction to Adventure Education (Fall only)
	HESM/PRT 2	15 Principles and Practices of Outdoor Leadership (Spring only)
	HESM 216	Backcountry Skills and Techniques (Summer only)
	HS 242	Introduction to Small Scale Landscape Design
	HS 471	Tree and Grounds Maintenance
	IDS/NR 303	Humans and the Environment
	LAR 221	Introduction to Environment and Behavior for Designers
	LAR 444	History of Landscape Architecture
	NR 400/500	Natural Resources Management (Spring only)
	PB 200	Plant Life
	PB 403/503	Systematic Botany
	PP 315	Principles of Plant Pathology (Fall only)

- PRT 315 Principles of Plant Pathology (Fall only) PRT 315 Organization and Administration of Outdoor Adventure Programs (Spring only)
- PS 320 U.S. Environmental Law and Politics
- PSY 312 Applied Psychology
- SSC 200 Soil Science
- SSC 421 Role of Soils in Environmental Management

#### Notes:

A study abroad experience with an emphasis in natural resource management is encouraged. Work with your adviser to obtain approval for course selection. Consider opportunities in Cairns, Australia, Namibia, Ghana and Guatemala.

Students in this concentration are strongly encouraged to participate in the NCSU Cooperative Education Program with a park or natural resource managing agency. PRTM advisors will work with students individually to facilitate such experiences.

Students in this concentration are strongly encouraged to select their HES activity course from the following list:

HESS 252 Skiing/Snowboarding		
HESO 253 Orienteering	HESO 259	Intermediate Rock Climbing
HESO 255 Basic Canoeing	HESO 262	Introduction to Whitewater Canoeing
HESO 257 Backpacking	HESO 276	Whitewater Rafting
HESO 258 Basic Rock Climbing	HESO 283	Mountaineering

Suggested minors for students choosing to add a minor to their degree program:

Outdoor Leadership	Soil Science
Horticultural Science	Crop Science
Economics	Political Science
<b>Business Management</b>	
	Outdoor Leadership Horticultural Science Economics Business Management
# Parks, Recreation and Tourism Management Program Management Concentration

Prepares students to develop and manage organized recreation activities for individuals and groups.

### **Concentration Courses (12):**

PRT 315	Org. and Admin. of Adventure Programs (3) (Spring only)
PRT 442	Rec. & Park Interpretive Services (3) (Spring only)
PRT 458	Special Events Planning (3) (Spring only, Preg. PRT 358)
DDT 407	

PRT 407 Services, Facilities and Event Marketing (3)

### **Concentration Elective Courses (Select 6 hours from the following)**

- AEE 311 Communication Methods/Media
- BUS 360 Marketing Methods
- COM 226 Introduction to Public Relations
- COM 316 Public Relations Writing
- EDP 304 Educational Psychology
- HESM/PRT 214 Introduction to Adventure Education
- HESM/PRT 215 Principles of Outdoor Leadership (spring only)
- HESM 216 Backcountry Skills/Techniques
- HESM 477 Coaching Concepts
- MIE 330 Human Resource Management
- MIE 335 Organizational Behavior
- PRT 266 Introduction to Sport Management
- PRT 277 Psychological and Cultural Dimensions of Sport
- PRT 420 Resort Management and Operations (spring only)
- PS 203 Introduction to Nonprofits
- PS 312 Introduction to Public Administration
- PSY 311 Social Psychology
- PSY 475 Child Psychology
- SOC 311 Community Relationships
- SW 201 Community Social Services

Suggested Minors: Psychology, Sociology, Outdoor Leadership, Nonprofit Leadership, Spanish

# Parks, Recreation and Tourism Management Sustainable Tourism

The sustainable tourism concentration focuses on sustainable planning, promotion, management and development of places as tourism attractions for economic growth and sustainability in local communities. The positions could be with private companies, nonprofit groups, or public agencies.

### **Required Courses (12 hours)**

All students must take the following 4 courses:

- PRT 419 Sustainable Tourism
- PRT 420 **Resort Planning and Management**
- Poverty, Health and Tourism PRT 430
- Introduction to Managerial Accounting ACC 200
  - or MIE 201 Intro to Business Practices

## **Elective Courses: (6 hours)**

Additionally, students must take at least 6 credits from the list below.

**International Development** 

ANT 431	Tourism Culture and Anthropology*
ANT 433	Anthropology of Ecotourism and Heritage
AEE 325	Planning and Delivering Non-formal Education
EI 201	Exploring Interdisciplinary Entrepreneurial Thinking
GIS 280	Introduction to GIS
IS 200	Intro to International Studies
NR 350	Sustainable Use of Natural Resources*
NR 406	Conservation of Biological Diversity
PS 320	US Environmental Law & Politics
PS 336	Global Environmental Politics
PRT 442	Interpretive Services
PRT 449	Human Dimensions of Nat. Res. in Australia/New Zealand *
PRT 450	Sustaining Natural Resources in Australia/New Zealand *
PRT 407	Services, Facilities and Event Marketing
PRT 458	Special Event
SOC 305	Racial & Ethic Relations
SOC 311	Community Relations

\* Study abroad courses

SOC 342

# **CURRICULUM REQUIREMENTS**

Format B

Degree/Plan Title: Parks, Recreation and Touris	<u>Plan SIS Code</u> : 15				
Concentration/Subplan Title: Recreation and Pa	ark Management	Subplan SIS Code: 15PRTRPM			
Indicate requirements status: Current: Proposed: X		Proposed Effective Semester: Fall, 2021			
<u>New Degree Audit required</u> ? (Y or N) Y					
Critical Path Courses - Identify using the code (CP) which courses are considered critical path courses which represent specific					

<u>Critical Path Courses</u> - 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		List GEP category and hours satisfied by a
C-wall or MGPA requirement and which are considered Critical		Major requirement
Path courses – indicate with (CP) next to applic. course.		
PRT Major:		
PRT 150	1	
PRT 152	3 (CP)	
PRT 220	3	
PRT 230	3	
PRT 238	3	
PRT 240	3	
PRT 358	4	
PRI 359	3 (CP)	
PRI 3/1	3	
PRT 375	2 2 (CD)	
PRT 380 DRT 454	5 (CP) 3	
PRT 475	8	
	0	
Math:		Mathematics (6 hours)
	3	, , , , , , , , , , , , , , , , , , ,
ST 311 or ST/BUS 350	3	
Other Major:		
COM 110 or COM 112	3	
EC (ARE 201, or ARE 201A, or EC 201, or EC 205)	3	Social Science
	54	
	<u>54</u>	
<b>Concentration Courses/Groups/Electives:</b> Pick 5 of the		
following 8 courses		
PRT 214		
PRT 250		
PRT 307	15 Credite	
PRT 342	15 creaits	
PRT 415		
PRT 451		
PRT 452		
PRT 485		
Free Electives:	21	
	<u></u>	

Total credit hours under Major Field of Study: Minimum 27 hours required in program area.	hours	
COLLEGE REQUIREMENTS:		
Orientation Course(s):		
<u>Other</u> :		
Total credit hours under College Requirements:	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/ Visual & Performing Arts.         6       Choose course(s) from the University Approved GEP course lists for Natural Sciences/Mathematical Sciences.         How will the GEP requirement be met?
Minimum 39-40 hrs	hours	(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.		(Choose statement 1, 2 or 3)
Natural Sciences (7 credits)		(Choose statement 1, 2 or 3)
(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 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)		(Choose statement 1, 2 or 3)
(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 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.	3	(Choose statement 1, 2 or 3) Choose course(s) from the University Approved GEP course list for this category.
Additional Breadth (3 credits)		(Choose statement 5 or 6)
(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 course(s) from the University Approved GEP course list for this category.
Interdisciplinary Perspectives (5 credits)		(Choose statement 1, 2 or 3)
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.	5	Choose course(s) from the University Approved GEP course list for this category.
Health and Exercise Studies(2 credits)(Including one Fitness and Wellness course)(2 credits)	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.	30 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 a "USD" or "GK" indicator.
U.S. Diversity co-requisite (USD)	n/a	(Choose statement 1 or 4)

Revised 4/2013

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)		Х	Satisfied by College/Program Requirements
Technology Fluency		Х	Satisfied by College/Program Requirements
Total credit hours required to complete Degree: Total must be within 120-128 credit hours.	<u>120 To</u>	otal hours	As applicable, indicate here the overall GPA requirement for degree completion including course completion.

#### Revised 4/2013

# **CURRICULUM REQUIREMENTS**

Format B

Degree/Plan Title: Parks, Recreation and Tourism Management		<u>Plan SIS Code</u> : 15
Concentration/Subplan Title: Tourism and Ev 15PRTTEM	ent Management	ubplan SIS Code:
Indicate requirements status: Current:	Proposed: X	Proposed Effective Semester: Fall, 2021
New Degree Audit required? (Y or N) Y		

<u>Critical Path Courses</u> - 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		List GEP category and hours satisfied by a
C-wall or MGPA requirement and which are considered Critical Path courses – indicate with (CP) part to applic, course		Major requirement
rath courses – indicate with (Cr) next to applie, course.		
PRT Maior:		
PRT 150	1	
PRT 152	3 (CP)	
PRT 220	3 (CI)	
PRT 230	2	
PRT 238	2	
PRT 240	3	
PRT 358	5	
	4 2 (CD)	
PRI 3/1 DDT 275	3 (CP)	
PRT 380	3	
PRT 454	2	
PRT 475	3 (CP)	
	3	
Math:	8	
MA 105, MA 107, MA 111, MA 114, MA 121		
ST 311 or ST/BUS 350		
	3	
Other Major:	3	Mathematics (6 hours)
COM 110 or COM 112		
EC (ARE 201, or ARE 201A, or EC 201, or EC 205)		
	3	
	3	
		Social Science
	<u>54</u>	
Concentration Courses/Groups/Electives: Pick 5 of the		
following 8 courses		
PRT 250		
PRT 307		
PRT 319	15 Credits	
DPT /10		
PRT 430		

PRT 458		
PRT 452		
Free Electives:	21	
Total credit hours under Major Field of Study: Minimum 27 hours required in program area.	hours	
COLLEGE REQUIREMENTS:		
Orientation Course(s):		
Other:		
Total credit hours under College Requirements:	Hours	

		At least one of the following must be listed:
NCSU GENERAL EDUCATION PROGRAM REQUIREMEN	1 Choose course(s) from the University Approved GEP	
MCSO GENERAL EDOCATION I ROOMANI REQUIREMEN	course list for this category.	
	2 Minimum requirements are satisfied by Major/College	
Courses in the Major and/or Minor may also fulfill a General Educ	cation	course requirements.
requirement; however, a GEP category <u>may not be subset</u> to requ	ire a	3 Major/College course requirement satisfies <u>X</u> credit hrs
specific course from the category list. Required courses must be li	sted in	from the University Approved CED source list for the esteron
the Major/College requirements		A Concerning Approved GEP course list for the category.
the wajory concyc requirements.		requirement
		5 Choose course(s) from the University Approved GEP
Specific courses should not be listed in any of the fields below of	ther	course lists for the Humanities/ Social Sciences/ Visual &
than ENG 101.		Performing Arts.
		6 Choose course(s) from the University Approved GEP
		course lists for Natural Sciences/Mathematical Sciences.
General Education Program Requirements:	Credit	How will the GEP requirement be met?
Minimum 39-40 hrs	hours	(Choose applicable statement from 1-6 listed above)
Mathematical Sciences (6 credits)		(Choose statement 1, 2 or 3)
(At least 1 course with MA or ST profix)		
(At least 1 course with what of 51 prenk) 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		
Natural Sciences (7 credits)		(Choose statement 1, 2 or 3)
(At least 1 /sh source or source with a /sh)		Choose $course(s)$ from the University
(At least 1 <i>Iab</i> course or course with a <i>Iab</i> )	7	
satisfy either the Global Knowledge or U.S. Diversity co-requisites		Approved GEP course list for this category.
Englich 101 (C- or better required) (4 credits)		
	4	ENG 101
(6 credite)		(Choose statement 1, 2 or 3)
Humanities		
(Courses from <i>two different</i> disciplines)	6	Choose course(s) from the University
Course(s) in the Major may double-count to satisfy this requirement and also		Approved GEP course list for this category.
Social Sciences (6 credits)		(Choose statement 1, 2 or 3)
		Chaosa course(a) from the University
(Courses from two alfferent disciplines)	3	Choose course(s) from the University
course(s) in the Major may acquire count to satisfy this requirement and also		Approved GEP course list for this category.
Additional Broadth (3 credits)		(Choose statement 5 or 6)
Chasse envised that is different from the envised of the Meier		
Major/College requirements cannot satisfy this requirement and an AP course	3	Choose course(s) from the University
cannot he double-counted excent in satisfying the Global Knowledge or U.S.		Ammoved CED course list for this sate
Diversity co-reauisites.		Approved GEP course list for this category.
Interdisciplinary Perspectives (5 credits)		(Choose statement 1, 2 or 3)
Course(s) in the Major may double-count to satisfy this requirement and also	5	Choose course(s) from the University
satisfy either the Global Knowledge or U.S. Diversity co-requisites	5	A suggest 1 CED second list for this (
		Approved GEP course list for this category.

Health and Exercise Studies(2 cl(Including one Fitness and Wellness course)	redits)	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.		30 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 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)		Х	Satisfied by College/Program Requirements
Technology Fluency		Х	Satisfied by College/Program Requirements
Total credit hours required to complete Degree: Total must be within 120-128 credit hours.	<u>120 T</u>	otal hours	As applicable, indicate here the overall GPA requirement for degree completion including course completion.

## NC STATE UNIVERSITY

DEPARTMENT OF NUCLEAR ENGINEERING 2500 Stinson Drive, Campus Box 7909 Raleigh, North Carolina USA 27695-7909 919.515.1466 knivanov@ncsu.edu

DATE: March 25,2021

- TO: Dr. Doneka R. Scott, Vice Chancellor and Dean, Division of Academic and Student Affairs
- FROM: Dr. Kostadin Ivanov, Department Head
- RE: Addition Prerequisite Statement for NE 201 Introduction to Nuclear Engineering

Nuclear Engineering is adding the following line to the prerequisite information of NE 201 --

#### Current

Prerequisite: Grade of C or better in MA 241, PY 205

#### Addition

Prerequisite: Grade of C or better in MA 241, PY 205 Cannot enroll in NE 201 once NE 301 has been taken. A non-required NE course must be used as a substitute. NE 235 does not qualify.

RECOMMEND	DED BY:	
NECOMMENT		_

Kostadin Avanov

Department Head Nuclear Engineering

02.17.202	1
Date	

<b>APPROVED BY:</b>	David W. Parish	30 Mar 2021
	Chair, College Curriculum Committee	Date
	Jerome P. Lavelle	March 30, 2021
	College Dean	Date
	•	
	Chair, University Courses & Curricula Committee	e Date

Office of the Provost

Date

APPROVED EFFECTIVE DATE:

with changes			
Nuclear Engineering (BS) (14NEBS)			
FRESHMAN YEAR			
	Cr		Cr
	edi		edi
Fall Semester	t		t
CH 101 Chemistry, A Molecular Science <sup>6</sup>	3	CSC 113 Matlab <sup>7</sup>	3
CH 102 General Chemistry Lab <sup>6</sup>	1	MA 241 Calculus II <sup>6</sup>	4
		PY 205 Physics for	
		Engineers & Scientists	
E 101 Intro to Engr & Prob Solving <sup>1</sup>	1	16	3
		PY 206 Physics for	
		Engineers & Scientists I	
E 115 Intro to Computing Environ	1	Lab	1
ENC 101 Academic Mutiting & Descented	4	EC 205 Economics (or	2
ENG 101 Academic Writing & Research	4	EC 201 OF ARE 201)*	3
	4	GEP Requirement*	3
HES_*** Health & Exercise Studies Course*	1		47
	15		1/
SOPHOMORE YEAR			
	Cr		Cr
Tell Consisten	edi	Carries Consector	edi
Fail Semester	τ	 Spring Semester	τ
MAE 206 Engineering Statics	2	MAE 208 Engineering	2
	5	MA 3/1 Appl	5
MA 242 Calculus III	4	Differential Fo	з
	•	NE 202 Rad. Sources	
NE 201 Intro to Nuclear Engr	2	Interact & Detect <sup>1</sup>	4
PY 208 Physics for Engineers & Scientists II	3	GEP Requirement*	3
PY 209 Physics for Engineers & Scientists II Lab	1	GEP Requirement*	3
Advanced Comm Elective <sup>2</sup>	3	· · · · ·	
	16		16
JUNIOR YEAR			
	Cr		Cr
	edi		edi
Fall Semester	t	Spring Semester	t
		MAE 308 Fluid	
MAE 201 Engr Thermo I	3	Mechanics	3
		MSE 201 Struct Prop of	
MA 401 Appl Diff Equations II	3	Engr Mat	3
		NE 400 Nuclear React	
NE 301 Fund of Nuclear Engr <sup>1</sup>	3	Ener Conver	4
		NE 401 React Analysis	
ISE 311 Engr Ec Analysis	3	& DES	3

		HES_*** Health &	
		Exercise Studies	
GEP Requirement* 3		Course*	1
		NE 403 Nuclear	
		Reactor Laboratory	2
15	5		16
SENIOR YEAR			
CI	r		Cr
ec	di		edi
Fall Semester t		Spring Semester	t
		NE 405 Reactor	
NE 402 Reactor Engr 4		Systems	3
		NE 408 Nucl Engr Des	
NE 404 Rad Safety & Shielding 3		Proj	3
NE 406 Nuclear Engr Senior Design Prep 1		ENGR Tech Elective <sup>5</sup>	3
NE Elective <sup>3</sup> 3		GEP Requirement*	3
Tech Elective <sup>4</sup> 3		GEP Requirement*	3
			14
			-
14	4		15
			12
Minimum Credit Hours Required for Graduation*:			3
Major/Program requirements and footnotes:			
1. Minimum grade of C- required.			
2. Advanced Communication Elective: COM 110, COM 112, COM 146, C	COM 2	11, ENG 215, ENG 288, ENG 2	289,
ENG 322, ENG 331, ENG 332, ENG 333, FLA 201, FLA 202, FLC 201, FLC 202	2, FLF	201, FLF 202, FLF 208, FLG 20	01,
FLG 202, FLI 201, FLI 202, FLJ 201, FLJ 202, FLJ 203, FLJ 203, FLJ 204, FLJ 20	05, FLk	( 201, FLK 202, FLN 201, FLN	202,
FLP 201, FLR 201, FLR 202, FLS 201, FLS 202, FLS 208, GRK 201, GRK 202, L	LAT 20	1, LAT 202, PER 201, PER 202	2. It
any of the listed courses are taken to satisfy this requirement, must take a	anoth	er course for any of the GEP	
L roquiromontc			
requirements.			
requirements.     Solution of the section of t			
3. Nuclear Engineering Electives: NE 409, NE 412, NE 418, NE 509, NE 512, NE/PY 528.			
requirements.         3. Nuclear Engineering Electives: NE 409, NE 412, NE 418, NE 509, NE 512, NE/PY 528.			
requirements.         3. Nuclear Engineering Electives: NE 409, NE 412, NE 418, NE 509, NE 512, NE/PY 528.         4. Technical Electives: CSC 302: CH 315, 331: MA 405, 427: PY 341.			
requirements.         3. Nuclear Engineering Electives: NE 409, NE 412, NE 418, NE 509, NE 512, NE/PY 528.         4. Technical Electives: CSC 302; CH 315, 331; MA 405, 427; PY 341, 411, 414, 415, 525; ST 361, 370, 371.			
requirements.         3. Nuclear Engineering Electives: NE 409, NE 412, NE 418, NE 509, NE 512, NE/PY 528.         4. Technical Electives: CSC 302; CH 315, 331; MA 405, 427; PY 341, 411, 414, 415, 525; ST 361, 370, 371.			
requirements.         3. Nuclear Engineering Electives: NE 409, NE 412, NE 418, NE 509, NE 512, NE/PY 528.         4. Technical Electives: CSC 302; CH 315, 331; MA 405, 427; PY 341, 411, 414, 415, 525; ST 361, 370, 371.         5. Engineering Technical Electives: Any course from the list of approved	d NE e	lectives (Footnote 3) or any	
requirements.         3. Nuclear Engineering Electives: NE 409, NE 412, NE 418, NE 509, NE 512, NE/PY 528.         4. Technical Electives: CSC 302; CH 315, 331; MA 405, 427; PY 341, 411, 414, 415, 525; ST 361, 370, 371.         5. Engineering Technical Electives: Any course from the list of approved College of Engineering course at the 300-level or above, except for CSC co	d NE e	lectives (Footnote 3) or any	
requirements.         3. Nuclear Engineering Electives: NE 409, NE 412, NE 418, NE 509, NE 512, NE/PY 528.         4. Technical Electives: CSC 302; CH 315, 331; MA 405, 427; PY 341, 411, 414, 415, 525; ST 361, 370, 371.         5. Engineering Technical Electives: Any course from the list of approved College of Engineering course at the 300-level or above, except for CSC content of the cont	d NE e	lectives (Footnote 3) or any	
requirements.         3. Nuclear Engineering Electives: NE 409, NE 412, NE 418, NE 509, NE 512, NE/PY 528.         4. Technical Electives: CSC 302; CH 315, 331; MA 405, 427; PY 341, 411, 414, 415, 525; ST 361, 370, 371.         5. Engineering Technical Electives: Any course from the list of approved College of Engineering course at the 300-level or above, except for CSC co         6. Grade of C (2.0) or higher required.	d NE e	lectives (Footnote 3) or any	
requirements.         3. Nuclear Engineering Electives: NE 409, NE 412, NE 418, NE 509, NE 512, NE/PY 528.         4. Technical Electives: CSC 302; CH 315, 331; MA 405, 427; PY 341, 411, 414, 415, 525; ST 361, 370, 371.         5. Engineering Technical Electives: Any course from the list of approved College of Engineering course at the 300-level or above, except for CSC co         6. Grade of C (2.0) or higher required.         7. NE491 Fortran (Azmy) or CSC 113 Introduction to Computing -	d NE e	lectives (Footnote 3) or any	
requirements.         3. Nuclear Engineering Electives: NE 409, NE 412, NE 418, NE 509, NE 512, NE/PY 528.         4. Technical Electives: CSC 302; CH 315, 331; MA 405, 427; PY 341, 411, 414, 415, 525; ST 361, 370, 371.         5. Engineering Technical Electives: Any course from the list of approved College of Engineering course at the 300-level or above, except for CSC complete of C (2.0) or higher required.         7. NE491 Fortran (Azmy) or CSC 113 Introduction to Computing - Matlab	d NE e	lectives (Footnote 3) or any	
requirements.         3. Nuclear Engineering Electives: NE 409, NE 412, NE 418, NE 509, NE 512, NE/PY 528.         4. Technical Electives: CSC 302; CH 315, 331; MA 405, 427; PY 341, 411, 414, 415, 525; ST 361, 370, 371.         5. Engineering Technical Electives: Any course from the list of approved College of Engineering course at the 300-level or above, except for CSC co         6. Grade of C (2.0) or higher required.         7. NE491 Fortran (Azmy) or CSC 113 Introduction to Computing - Matlab	d NE e	lectives (Footnote 3) or any	

To complete the requirements for graduation and the General Educat and co-requisites must be satisfied. University approved GEP course li	ion Pro sts for	ogra ea	am, the following credit hou ch category can be found	rs
Health & Evercise Studies – 2 hours to be selected from the				
approved GED Health & Exercise Studies list				
approved GEP Treating Exercise Studies list.				
100-level course).				
b. One additional credit hour of Health & Exercise Studies activity				
courses above 100 level.				
HUMANITIES – 6 credits to be selected in two different disciplines				
from the approved GEP Humanities list.				
SOCIAL SCIENCES – 3 credits to be selected in a discipline other than a Sciences list. EC 205 (or EC201 or ARE 201) taken as part of the Major the 6 credit hours needed to fulfill the GEP Social Sciences requirement	econor require nt.	nic em	s from the approved GEP Soc ents satisfies 3 credit hours of	cial of
ADDITIONAL BREADTH – 3 credits to be selected from the approved				
GEP Humanities, Social Sciences or Visual and Performing Arts lists.				
INTERDISCIPLINARY PERSPECTIVES – 5-6 credits to be selected from				
the approved GEP Interdisciplinary Perspectives list.				
Co-requisites:				
U.S. Diversity and Global Knowledge co-requisites must be satisfied to	comp	let	e the General Education	
requirements. Choose course(s) that are identified on the approved G	EP cou	irse	e lists as meeting the U.S.	
Diversity and Global Knowledge co-requisites.				
Foreign Language proficiency at the FL_102 level will be required for				
graduation.				

with changes				
Nuclear Engineering (BS) (14NEBS)				
FRESHMAN YEAR				
	Cr			Cr
	edi			edi
Fall Semester	t			t
CH 101 Chemistry, A Molecular Science <sup>6</sup>	3		CSC 113 Matlab <sup>7</sup>	3
CH 102 General Chemistry Lab <sup>6</sup>	1		MA 241 Calculus II <sup>6</sup>	4
			PY 205 Physics for	
			Engineers & Scientists	
E 101 Intro to Engr & Prob Solving <sup>1</sup>	1		l <sup>6</sup>	3
			PY 206 Physics for	
			Engineers & Scientists I	
E 115 Intro to Computing Environ	1		Lab	1
			EC 205 Economics (or	
ENG 101 Academic Writing & Research <sup>1</sup>	4		EC 201 or ARE 201)*	3
MA 141 Calculus I <sup>6</sup>	4		GEP Requirement*	3
HES_*** Health & Exercise Studies Course*	1			
	15			17
SOPHOMORE YEAR				
	Cr			Cr
	edi			edi
Fall Semester	t		Spring Semester	t
			MAE 208 Engineering	
MAE 206 Engineering Statics	3		Dynamics	3
			MA 341 Appl	2
	4		Differential Eq	3
NE 201 Intro to Nuclear Engr <sup>8</sup>	2		Interact & Detect <sup>1</sup>	4
NE 201 INTO LO NUCLEAR ENgr	2		CEP Dequirement*	4
PY 208 Physics for Engineers & Scientists II	3		GEP Requirement*	3
PY 209 Physics for Engineers & Scientists II Lab	1		GEP Requirement*	3
Advanced Comm Elective	3			10
	16			16
JUNIOR YEAR				-
	Cr			Cr
E.I.C.	edi			edi
Fail Semester	τ		Spring Semester	τ
MAE 201 Engr Thormal	2		Machanica	2
	3		MSE 201 Struct Drop of	3
MA 401 Appl Diff Equations II	2		Engr Mat	2
	<u>ے</u>	-	NE 400 Nuclear Peact	د ا
NE 301 Fund of Nuclear Engr <sup>1</sup>	2		Fner Conver	л
	5	-	NF 401 React Analysis	-+
ISE 311 Engr Ec Analysis	З		& DFS	3
			~ > =>	5

		HES_*** Health &	
		Exercise Studies	
GEP Requirement*	3	Course*	1
		NE 403 Nuclear	
		Reactor Laboratory	2
	15		16
SENIOR YEAR			
	Cr		Cr
	edi		ed
Fall Semester	t	Spring Semester	t
		NE 405 Reactor	
NE 402 Reactor Engr	4	Systems	3
		NE 408 Nucl Engr Des	
NE 404 Rad Safety & Shielding	3	Proj	3
NE 406 Nuclear Engr Senior Design Prep	1	ENGR Tech Elective <sup>5</sup>	3
NE Elective <sup>3</sup>	3	GEP Requirement*	3
Tech Elective <sup>4</sup>	3	GEP Requirement*	3
			14
			-
	14		15
			12
Minimum Credit Hours Required for Graduation*:			3
Major/Program requirements and footnotes:			
1 Minimum grade of C required			
$\mathbf{I}$ . Minimum grade of $C^2$ required.			
2 Advanced Communication Elective: COM 110, COM 112, COM	146 COM	211 ENG 215 ENG 289 ENG	290
<ol> <li>Advanced Communication Elective: COM 110, COM 112, COM 1</li> <li>FNG 322, ENG 331, ENG 332, ENG 333, ELA 201, ELA 202, ELC 201, EL</li> </ol>	146, COM	211, ENG 215, ENG 288, ENG 201, ELE 202, ELE 208, ELG	i 289, 201.
2. Advanced Communication Elective: COM 110, COM 112, COM 2 ENG 322, ENG 331, ENG 332, ENG 333, FLA 201, FLA 202, FLC 201, FL FLG 202, FLI 201, FLI 202, FLJ 201, FLJ 202, FLJ 203, FLJ 203, FLJ 204,	146, COM LC 202, FL FLJ 205, F	 211, ENG 215, ENG 288, ENG F 201, FLF 202, FLF 208, FLG .K 201, FLK 202, FLN 201, FLF	i 289, 201, N 202
2. Advanced Communication Elective: COM 110, COM 112, COM 2 ENG 322, ENG 331, ENG 332, ENG 333, FLA 201, FLA 202, FLC 201, F FLG 202, FLI 201, FLI 202, FLJ 201, FLJ 202, FLJ 203, FLJ 203, FLJ 204, FLP 201, FLR 201, FLR 202, FLS 201, FLS 202, FLS 208, GRK 201, GRK	146, COM LC 202, FL FLJ 205, F 202, LAT 2	 211, ENG 215, ENG 288, ENG F 201, FLF 202, FLF 208, FLG .K 201, FLK 202, FLN 201, FLI 01, LAT 202, PER 201, PER 20	i 289, 201, N 202 <u>)</u> D2. If
2. Advanced Communication Elective: COM 110, COM 112, COM 2 ENG 322, ENG 331, ENG 332, ENG 333, FLA 201, FLA 202, FLC 201, F FLG 202, FLI 201, FLI 202, FLJ 201, FLJ 202, FLJ 203, FLJ 203, FLJ 204, FLP 201, FLR 201, FLR 202, FLS 201, FLS 202, FLS 208, GRK 201, GRK any of the listed courses are taken to satisfy this requirement, must	146, COM LC 202, FL FLJ 205, F 202, LAT 2 take anot	211, ENG 215, ENG 288, ENG 7 201, FLF 202, FLF 208, FLG K 201, FLK 202, FLN 201, FLF 01, LAT 202, PER 201, PER 20 her course for any of the GE	5 289, 201, N 202 D2. If
2. Advanced Communication Elective: COM 110, COM 112, COM 1 ENG 322, ENG 331, ENG 332, ENG 333, FLA 201, FLA 202, FLC 201, FL FLG 202, FLI 201, FLI 202, FLJ 201, FLJ 202, FLJ 203, FLJ 203, FLJ 204, FLP 201, FLR 201, FLR 202, FLS 201, FLS 202, FLS 208, GRK 201, GRK any of the listed courses are taken to satisfy this requirement, must requirements.	146, COM LC 202, FL FLJ 205, F 202, LAT 2 take anot	211, ENG 215, ENG 288, ENG F 201, FLF 202, FLF 208, FLG K 201, FLK 202, FLN 201, FLI 01, LAT 202, PER 201, PER 20 her course for any of the GE	i 289, 201, N 202 D2. If
2. Advanced Communication Elective: COM 110, COM 112, COM 1 ENG 322, ENG 331, ENG 332, ENG 333, FLA 201, FLA 202, FLC 201, F FLG 202, FLI 201, FLI 202, FLJ 201, FLJ 202, FLJ 203, FLJ 203, FLJ 204, FLP 201, FLR 201, FLR 202, FLS 201, FLS 202, FLS 208, GRK 201, GRK any of the listed courses are taken to satisfy this requirement, must requirements.	146, COM LC 202, FL FLI 205, F 202, LAT 2 take anot	211, ENG 215, ENG 288, ENG 7 201, FLF 202, FLF 208, FLG K 201, FLK 202, FLN 201, FLF 01, LAT 202, PER 201, PER 20 her course for any of the GE	5 289, 201, N 202 D2. If
<ol> <li>Advanced Communication Elective: COM 110, COM 112, COM 2</li> <li>ENG 322, ENG 331, ENG 332, ENG 333, FLA 201, FLA 202, FLC 201, FLG 202, FLI 201, FLI 202, FLJ 201, FLJ 202, FLJ 203, FLJ 203, FLJ 204, FLP 201, FLR 201, FLR 202, FLS 201, FLS 202, FLS 208, GRK 201, GRK any of the listed courses are taken to satisfy this requirement, must requirements.</li> <li>Nuclear Engineering Electives: NE 409, NE 412, NE 418, NE 509, NE 512, NE 512, NE 520</li> </ol>	146, COM LC 202, FL FLJ 205, Fl 202, LAT 2 take anot	211, ENG 215, ENG 288, ENG F 201, FLF 202, FLF 208, FLG K 201, FLK 202, FLN 201, FLI 01, LAT 202, PER 201, PER 20 her course for any of the GE	i 289, 201, N 202 D2. If
<ol> <li>Advanced Communication Elective: COM 110, COM 112, COM : ENG 322, ENG 331, ENG 332, ENG 333, FLA 201, FLA 202, FLC 201, FL FLG 202, FLI 201, FLI 202, FLJ 201, FLJ 202, FLJ 203, FLJ 203, FLJ 204, FLP 201, FLR 201, FLR 202, FLS 201, FLS 202, FLS 208, GRK 201, GRK any of the listed courses are taken to satisfy this requirement, must requirements.</li> <li>Nuclear Engineering Electives: NE 409, NE 412, NE 418, NE 509, NE 512, NE/PY 528.</li> </ol>	146, COM LC 202, FL FLJ 205, F 202, LAT 2 take anot	211, ENG 215, ENG 288, ENG F 201, FLF 202, FLF 208, FLG K 201, FLK 202, FLN 201, FLT 01, LAT 202, PER 201, PER 20 her course for any of the GE	i 289, 201, N 202, D2. If
<ol> <li>Advanced Communication Elective: COM 110, COM 112, COM 1 ENG 322, ENG 331, ENG 332, ENG 333, FLA 201, FLA 202, FLC 201, FL FLG 202, FLI 201, FLI 202, FLJ 201, FLJ 202, FLJ 203, FLJ 203, FLJ 204, FLP 201, FLR 201, FLR 202, FLS 201, FLS 202, FLS 208, GRK 201, GRK any of the listed courses are taken to satisfy this requirement, must requirements.</li> <li>Nuclear Engineering Electives: NE 409, NE 412, NE 418, NE 509, NE 512, NE/PY 528.</li> </ol>	146, COM LC 202, FL FLJ 205, F 202, LAT 2 take anot	211, ENG 215, ENG 288, ENG F 201, FLF 202, FLF 208, FLG K 201, FLK 202, FLN 201, FLI 01, LAT 202, PER 201, PER 20 her course for any of the GE	i 289, 201, N 202, D2. If
<ol> <li>Advanced Communication Elective: COM 110, COM 112, COM 2</li> <li>ENG 322, ENG 331, ENG 332, ENG 333, FLA 201, FLA 202, FLC 201, F FLG 202, FLI 201, FLI 202, FLJ 201, FLJ 202, FLJ 203, FLJ 203, FLJ 204, FLP 201, FLR 201, FLR 202, FLS 201, FLS 202, FLS 208, GRK 201, GRK any of the listed courses are taken to satisfy this requirement, must requirements.</li> <li>Nuclear Engineering Electives: NE 409, NE 412, NE 418, NE 509, NE 512, NE/PY 528.</li> <li>Technical Electives: CSC 302; CH 315, 331; MA 405, 427; PY 341</li> </ol>	146, COM LC 202, FL FLJ 205, Fl 202, LAT 2 take anot	211, ENG 215, ENG 288, ENG F 201, FLF 202, FLF 208, FLG K 201, FLK 202, FLN 201, FLI 01, LAT 202, PER 201, PER 20 her course for any of the GE	i 289, 201, N 202, D2. If
<ol> <li>Advanced Communication Elective: COM 110, COM 112, COM : ENG 322, ENG 331, ENG 332, ENG 333, FLA 201, FLA 202, FLC 201, F FLG 202, FLI 201, FLI 202, FLJ 201, FLJ 202, FLJ 203, FLJ 203, FLJ 204, FLP 201, FLR 201, FLR 202, FLS 201, FLS 202, FLS 208, GRK 201, GRK any of the listed courses are taken to satisfy this requirement, must requirements.</li> <li>Nuclear Engineering Electives: NE 409, NE 412, NE 418, NE 509, NE 512, NE/PY 528.</li> <li>Technical Electives: CSC 302; CH 315, 331; MA 405, 427; PY 341 411, 414, 415, 525; ST 361, 370, 371.</li> </ol>	146, COM LC 202, FL FLJ 205, F 202, LAT 2 take anot	211, ENG 215, ENG 288, ENG F 201, FLF 202, FLF 208, FLG K 201, FLK 202, FLN 201, FLI 01, LAT 202, PER 201, PER 20 her course for any of the GE	i 289, 201, N 202, D2. If
<ol> <li>Advanced Communication Elective: COM 110, COM 112, COM 1 ENG 322, ENG 331, ENG 332, ENG 333, FLA 201, FLA 202, FLC 201, F FLG 202, FLI 201, FLI 202, FLJ 201, FLJ 202, FLJ 203, FLJ 203, FLJ 204, FLP 201, FLR 201, FLR 202, FLS 201, FLS 202, FLS 208, GRK 201, GRK any of the listed courses are taken to satisfy this requirement, must requirements.</li> <li>Nuclear Engineering Electives: NE 409, NE 412, NE 418, NE 509, NE 512, NE/PY 528.</li> <li>Technical Electives: CSC 302; CH 315, 331; MA 405, 427; PY 341 411, 414, 415, 525; ST 361, 370, 371.</li> </ol>	146, COM LC 202, FL FLJ 205, F 202, LAT 2 take anot	211, ENG 215, ENG 288, ENG F 201, FLF 202, FLF 208, FLG K 201, FLK 202, FLN 201, FLI 01, LAT 202, PER 201, PER 20 her course for any of the GEI	i 289, 201, N 202 D2. If
<ol> <li>Advanced Communication Elective: COM 110, COM 112, COM 1 ENG 322, ENG 331, ENG 332, ENG 333, FLA 201, FLA 202, FLC 201, F FLG 202, FLI 201, FLI 202, FLJ 201, FLJ 202, FLJ 203, FLJ 203, FLJ 204, FLP 201, FLR 201, FLR 202, FLS 201, FLS 202, FLS 208, GRK 201, GRK any of the listed courses are taken to satisfy this requirement, must requirements.</li> <li>Nuclear Engineering Electives: NE 409, NE 412, NE 418, NE 509, NE 512, NE/PY 528.</li> <li>Technical Electives: CSC 302; CH 315, 331; MA 405, 427; PY 341 411, 414, 415, 525; ST 361, 370, 371.</li> <li>Engineering Technical Electives: Any course from the list of app College of Engineering course at the 300-level or above, except for</li> </ol>	146, COM LC 202, FL FLJ 205, Fl 202, LAT 2 take anot	211, ENG 215, ENG 288, ENG 211, ENG 215, ENG 288, ENG F 201, FLF 202, FLF 208, FLG .K 201, FLK 202, FLN 201, FLI 01, LAT 202, PER 201, PER 20 her course for any of the GE her course for any of the GE electives (Footnote 3) or any s	i 289, 201, N 202, D2. If
<ol> <li>Advanced Communication Elective: COM 110, COM 112, COM : ENG 322, ENG 331, ENG 332, ENG 333, FLA 201, FLA 202, FLC 201, F FLG 202, FLI 201, FLI 202, FLJ 201, FLJ 202, FLJ 203, FLJ 203, FLJ 204, FLP 201, FLR 201, FLR 202, FLS 201, FLS 202, FLS 208, GRK 201, GRK any of the listed courses are taken to satisfy this requirement, must requirements.</li> <li>Nuclear Engineering Electives: NE 409, NE 412, NE 418, NE 509, NE 512, NE/PY 528.</li> <li>Technical Electives: CSC 302; CH 315, 331; MA 405, 427; PY 341 411, 414, 415, 525; ST 361, 370, 371.</li> <li>Engineering Technical Electives: Any course from the list of app College of Engineering course at the 300-level or above, except for College</li> </ol>	146, COM LC 202, FL FLJ 205, F 202, LAT 2 take anot	211, ENG 215, ENG 288, ENG 211, ENG 215, ENG 288, ENG F 201, FLF 202, FLF 208, FLG .K 201, FLK 202, FLN 201, FLI 01, LAT 202, PER 201, PER 20 her course for any of the GEI electives (Footnote 3) or any s.	i 289, 201, N 202 D2. If
<ol> <li>Advanced Communication Elective: COM 110, COM 112, COM 1 ENG 322, ENG 331, ENG 332, ENG 333, FLA 201, FLA 202, FLC 201, F FLG 202, FLI 201, FLI 202, FLJ 201, FLJ 202, FLJ 203, FLJ 203, FLJ 204, FLP 201, FLR 201, FLR 202, FLS 201, FLS 202, FLS 208, GRK 201, GRK any of the listed courses are taken to satisfy this requirement, must requirements.</li> <li>Nuclear Engineering Electives: NE 409, NE 412, NE 418, NE 509, NE 512, NE/PY 528.</li> <li>Technical Electives: CSC 302; CH 315, 331; MA 405, 427; PY 341 411, 414, 415, 525; ST 361, 370, 371.</li> <li>Engineering Technical Electives: Any course from the list of app College of Engineering course at the 300-level or above, except for C</li> </ol>	146, COM LC 202, FL FLJ 205, F 202, LAT 2 take anot	211, ENG 215, ENG 288, ENG F 201, FLF 202, FLF 208, FLG K 201, FLK 202, FLN 201, FLI 01, LAT 202, PER 201, PER 20 her course for any of the GEI electives (Footnote 3) or any s.	i 289, 201, N 202, D2. If
<ol> <li>Advanced Communication Elective: COM 110, COM 112, COM 1 ENG 322, ENG 331, ENG 332, ENG 333, FLA 201, FLA 202, FLC 201, F FLG 202, FLI 201, FLI 202, FLJ 201, FLJ 202, FLJ 203, FLJ 203, FLJ 204, FLP 201, FLR 201, FLR 202, FLS 201, FLS 202, FLS 208, GRK 201, GRK any of the listed courses are taken to satisfy this requirement, must requirements.</li> <li>Nuclear Engineering Electives: NE 409, NE 412, NE 418, NE 509, NE 512, NE/PY 528.</li> <li>Technical Electives: CSC 302; CH 315, 331; MA 405, 427; PY 341 411, 414, 415, 525; ST 361, 370, 371.</li> <li>Engineering Technical Electives: Any course from the list of app College of Engineering course at the 300-level or above, except for C</li> <li>Grade of C (2.0) or higher required.</li> <li>NE401 Fortran (Army) or CSC 112 Introduction to Computing</li> </ol>	146, COM LC 202, FL FLJ 205, F 202, LAT 2 take anot	211, ENG 215, ENG 288, ENG 211, ENG 215, ENG 288, ENG F 201, FLF 202, FLF 208, FLG .K 201, FLK 202, FLN 201, FLI 01, LAT 202, PER 201, PER 20 her course for any of the GEI electives (Footnote 3) or any s.	i 289, 201, N 202, D2. If
<ol> <li>Advanced Communication Elective: COM 110, COM 112, COM 1 ENG 322, ENG 331, ENG 332, ENG 333, FLA 201, FLA 202, FLC 201, F FLG 202, FLI 201, FLI 202, FLJ 201, FLJ 202, FLJ 203, FLJ 203, FLJ 204, FLP 201, FLR 201, FLR 202, FLS 201, FLS 202, FLS 208, GRK 201, GRK any of the listed courses are taken to satisfy this requirement, must requirements.</li> <li>Nuclear Engineering Electives: NE 409, NE 412, NE 418, NE 509, NE 512, NE/PY 528.</li> <li>Technical Electives: CSC 302; CH 315, 331; MA 405, 427; PY 341 411, 414, 415, 525; ST 361, 370, 371.</li> <li>Engineering Technical Electives: Any course from the list of app College of Engineering course at the 300-level or above, except for 0</li> <li>Grade of C (2.0) or higher required.</li> <li>NE491 Fortran (Azmy) or CSC 113 Introduction to Computing - Matlab</li> </ol>	146, COM LC 202, FL FLJ 205, F 202, LAT 2 take anot	211, ENG 215, ENG 288, ENG 211, ENG 215, ENG 288, ENG F 201, FLF 202, FLF 208, FLG .K 201, FLK 202, FLN 201, FLI 01, LAT 202, PER 201, PER 20 her course for any of the GEI electives (Footnote 3) or any s.	i 289, 201, N 202, D2. If
<ol> <li>Advanced Communication Elective: COM 110, COM 112, COM 1 ENG 322, ENG 331, ENG 332, ENG 333, FLA 201, FLA 202, FLC 201, F FLG 202, FLI 201, FLI 202, FLJ 201, FLJ 202, FLJ 203, FLJ 203, FLJ 204, FLP 201, FLR 201, FLR 202, FLS 201, FLS 202, FLS 208, GRK 201, GRK any of the listed courses are taken to satisfy this requirement, must requirements.</li> <li>Nuclear Engineering Electives: NE 409, NE 412, NE 418, NE 509, NE 512, NE/PY 528.</li> <li>Technical Electives: CSC 302; CH 315, 331; MA 405, 427; PY 341 411, 414, 415, 525; ST 361, 370, 371.</li> <li>Engineering Technical Electives: Any course from the list of app College of Engineering course at the 300-level or above, except for C</li> <li>Grade of C (2.0) or higher required.</li> <li>NE491 Fortran (Azmy) or CSC 113 Introduction to Computing - Matlab</li> <li>Cannot enroll in NE 201 once NE 301 has been taken. A non-</li> </ol>	146, COM LC 202, FL FLJ 205, F 202, LAT 2 take anot	211, ENG 215, ENG 288, ENG 211, ENG 215, ENG 288, ENG F 201, FLF 202, FLF 208, FLG .K 201, FLK 202, FLN 201, FLI 01, LAT 202, PER 201, PER 20 her course for any of the GEI electives (Footnote 3) or any s.	i 289, 201, N 202, D2. If

*General Education Program (GEP) requirements:				
To complete the requirements for graduation and the General Educat	ion Pro	ogra	am, the following credit hou	rs
and co-requisites must be satisfied. University approved GEP course li	sts for	ea	ch category can be found	
at http://oucc.dasa.ncsu.edu/general-education-program/.	1	1		r –
Health & Exercise Studies – 2 hours to be selected from the				
approved GEP field in & Exercise Studies list.				
a. One fittless and weilless course (any field in a Exercise Studies				
h. One additional credit hour of Health & Exercise Studies activity				
courses above 100 level.				
HUMANITIES – 6 credits to be selected in two different disciplines				
from the approved GEP Humanities list.				
			·	
SOCIAL SCIENCES – 3 credits to be selected in a discipline other than e	econor	nic	s from the approved GEP So	cial
Sciences list. EC 205 (or EC201 or ARE 201) taken as part of the Major	requir	em	ents satisfies 3 credit hours	of
The o credit hours needed to fulfill the GEP social sciences requirement	π.			<u> </u>
ADDITIONAL READTH - 2 credits to be selected from the approved				
GEP Humanities Social Sciences or Visual and Performing Arts lists				
INTERDISCIPLINARY PERSPECTIVES – 5-6 credits to be selected from				
the approved GEP Interdisciplinary Perspectives list.				
Co-requisites:				
U.S. Diversity and Global Knowledge co-requisites must be satisfied to	comp	lete	e the General Education	
requirements. Choose course(s) that are identified on the approved G	EP cou	irse	e lists as meeting the U.S.	
Diversity and Global Knowledge co-requisites.			<u> </u>	
Foreign Language proficiency at the FL_102 level will be required for				
graduation.				



College Engineering Office of Academic Affairs

engr.ncsu.edu

Campus Box 7904 21 Current Drive, Page Hall Raleigh, NC 27695-7904 P: 919-515-3263

Date: March 24, 2021 To: NC State Courses, Curricula and Academic Standards Committee From: Jerome Lavelle, Associate Dean, College of Engineering

## Subject: Request for a New Course Prefix

perome P. Javelle

<u>Overview:</u> The College of Engineering, in partnership with the College of Education, is in the process of establishing MS and PhD *Engineering Education* degree programs. A cross-functional team with representation from both Colleges, and university personnel, has been working toward formal approval of these programs. These NC State *Engineering Education* programs create an academic community similar to those at top tier engineering peers such as Purdue University and Virginia Tech. Courses within the curricula focus on the pedagogy of teaching engineering, the interdisciplinary nature of engineering problems, and engaging in the scholarly practice of engineering education through a global lens. Commensurate with these concepts is the application of a socially inclusive, diverse perspective that emphasizes the *NAE Grand Challenges of Engineering*, the impact of socio-economic disparities on the actualization of engineering knowledge as well as the ecosystem that enables development and delivery of solutions around concepts such as the United Nations *Sustainable Development Challenges*. These programs seek to graduate specially trained engineering educators who will impact both practice and scholarship while developing unique methodologies for teaching and learning across the various disciplines.

In addition to the development and approval of the MS and PhD curricula, program faculty are also creating an *Engineering Education* academic minor for undergraduate students. In fact, several courses have already been taught, and others are currently under development. This activity precipitates the need for a new course prefix, and thus the subject of this request. To date, faculty have been delivering these undergraduate courses as *special topics* courses using the EGR prefix. There is now sufficient momentum in course offerings that a new course prefix is justified. In addition, this course prefix will be used to designate courses offered at the MS an PhD levels, for use in existing curricula in the two colleges, and then ultimately as part of the MS/PhD *Engineering Education* curricula once approved.

<u>Request:</u> The College of Engineering requests the creation of the new course prefix EED, to be used in support of courses for a new undergraduate academic minor, as part of graduate plans of study in existing MS and PhD programs, and as the core prefix for the MS/PhD *Engineering Education* degree programs in partnership with the College of Education once approved. Details include:

Contact Information of Lead Faculty: Laura Bottomley, Ph.D. (<u>laurab@ncsu.edu</u>) Proposed Prefix: EED Subject Title: Engineering Education Academic Organization: College of Engineering Academic Program Code: 14EED CIP Code: 14.9999 Engineering, Other Proposed Effective Date: Fall 2021



**College of Engineering** Department of Computer Science

www.csc.ncsu.edu

Campus Box 8206 890 Oval Drive Raleigh, NC 27695-8206 P: 919.515.2042

#### МЕМО

- To: Dr. Doneka R. Scott Vice-Chancellor and Dean Division of Academic and Student Affairs
- From: Dr. Sarah Heckman (sarah\_heckman@ncsu.edu) Director of Undergraduate Programs, Department of Computer Science Phone: +1.919.515.2040
- Date: March 23, 2021

Subject: 14CSCBS-14CSCCYSEC

We are making the following changes to the 14CSCBS-14CSCCYSEC degree to move CSC 236 from CSC core to CSC Cybersecurity Concentration core. This follows the removal of CSC 236 from CSC core.

The other changes include housekeeping updates on the lists of CSC Restricted Electives and Other Restricted Electives.

Format B

- Remove CSC 236 as a required course for the major and add as a required course for the concentration
- Add CSC 236, CSC 414, CSC 423, CSC 433, CSC 472, CSC 486, CSC 498 as CSC Restricted Electives (GRP 033). Note that CSC 236 is listed as an CSC RE in GRP 033 for consistency with 14CSCBS and 14CSCBS-GAMES; however as a concentration requirement students will be unable to use the course for both the concentration and a CSC RE.

Proposed effective date: 07/2021

Sail S. d	3/23/2021
Director of Undergraduate Programs, Computer Science	Date
No Ma	3/24/2021
Head, Department of Computer Science	Date
David W. Parish Chair, COE Courses and Curriculum Committee	29 Mar 2021 Date
Dean, College of Engineering	March 29, 2021 Date
Chair, University Courses and Curricula Committee	Date

Office of the Provost

Date

#### GEP FORMAT A (SEMESTER-BY-SEMESTER CURRICULUM DISPLAY)

Current:

Proposed: X Proposed Effective Semester: 7/2021

### DEGREE TITLE: B.S. in Computer Science

#### CONCENTRATION TITLE: Cybersecurity

#### CURRENT DEGREE KEY: <u>14CSCBS-14CSCCYSEC</u>

# **FRESHMAN YEAR**

Fall Sem	ester_	Credits	Spring	<u>g Semester</u>	Credits
CH 101	Chemistry – A Molecular Science <sup>1,2,B</sup>	3	CSC 116	Intro. to Computing - Java <sup>2</sup>	3
CH 102	General Chemistry Laboratory <sup>1,2,B</sup>	1	MA 241	Calculus II <sup>1,2,A</sup>	4
E 101	Intro to Engineering & Prob Solving <sup>1,7</sup>	1	PY 205	Physics for Engrs & Sci I <sup>1,2,B</sup>	3
E 115	Intro to Computing Environments <sup>1</sup>	1	PY 206	Physics for Engrs & Sci I Lab <sup>1,2,B</sup>	1
ENG 101	Academic Writing and Research <sup>1,7,H</sup>	4	EC 205	Fund of Econ <sup>D</sup> (or EC 201 or ARE 201)	3
MA 141	Calculus I <sup>1,2,A</sup>	<u>4</u>	E 102	Engineering in the 21st Century <sup>1,2,G</sup>	<u>2</u>
		14			16

# **SOPHOMORE YEAR**

Fall Sem	<u>nester</u>	Credits	Spring	Semester	Credits
CSC 216	Software Development Fundamentals <sup>2</sup>	3	CSC 230	C and Software Tools	3
CSC 217	Software Development Fundamentals Lab <sup>2</sup>	1	CSC 316	Data Structures and Algorithms	3
CSC 226	Discrete Mathematics for CSC <sup>2</sup>	3	CSC 333	Automata, Grammars, and Computability	3
CSC 297	Cybersecurity Topics	1	CSC 297	Cybersecurity Topics	1
MA 242	Calculus III	4	MA 305	Elementary Linear Algebra	3
PY 208	Physics for Engrs & Sci II <sup>B</sup>	3	GEP Requir	ement*	<u>3</u>
PY 209	Physics for Engrs & Sci II Lab <sup>B</sup>	<u>1</u>			16
		16			

# **JUNIOR YEAR**

Fall Semester		<b>Credits</b>	Spring	g Semester	Credits [Variable]
CSC 236	Comp Org & Assem Lang for CSC	3	CSC 326	Software Engineering	4
CSC 246	Operating Systems for CSC	3	CSC 405	Computer Security <sup>2</sup>	3
CSC 474	Network Security <sup>2</sup>	3	CSC 379	Ethics in Computing	1
CSC 297	Cybersecurity Topics	1	ENG 331	Communication for Engr and Tech	3
ST 370	Probability & Statistics for Engrs	3	Health and	Exercise Studies Course <sup>E</sup>	1
GEP Requirement*		<u>3</u>	Other Restr	icted Elective <sup>4</sup>	<u>3</u>
•		16			15

# **SENIOR YEAR**

Fall Semester	Credits	Spring Semester	Credits	
CSC 471 Modern Topics in Cybersecurity <sup>2</sup>	3	CSC 472 Cybersecurity Project <sup>2</sup>	3	
CSC Cybersecurity Restricted Elective <sup>2,8</sup>	3	CSC Restricted Elective <sup>4</sup>	3	
CSC 492 Senior Design Project <sup>5</sup>	3	GEP Requirement*	3	
Basic Science Elective <sup>3,B</sup>	3	GEP Requirement*	3	
GEP Requirement*	<u>3</u>	Health and Exercise Studies Course <sup>E</sup>	1	
	15		13	

## Minimum Credit Hours Required for Graduation 1216,I,J,K

#### Major/Program requirements and footnotes:

<sup>1</sup>Courses required for matriculation (CODA).

<sup>2</sup>Grade of C or higher required.

<sup>3</sup>To be selected from CH 201, PY 123, 124, any PY course with a prerequisite of PY 208, or any PB, BIO, MEA, or ZO course.

<sup>4</sup>For CSC and Other Restricted Electives, see: http://www.csc.ncsu.edu/academics/undergrad/restrict.php.

<sup>5</sup>CSC 492 is the only course that meets this requirement in all CSC curricula effective August 2008 or thereafter.

<sup>6</sup>One of the following two conditions regarding the major GPA is required: 1) the major GPA, which consists of all CSC courses attempted at NCSU, must be 2.0 or higher or 2) a student whose major grade point average is below 2.0 may graduate if no CSC course used to satisfy the major requirements has a grade below a C-. <sup>7</sup>Grade of C- or higher required.

<sup>8</sup>To be selected from CSC 414, CSC 415, or CSC 433.

#### \*<u>General Education Program (GEP) requirements and GEP footnotes:</u>

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 <u>http://www.ncsu.edu/uap/academic-standards/gep/courselists/index.html</u>.

- <u>Mathematical Sciences</u> (6 credit hours one course with MA or ST prefix)
   Choose from the University approved GEP Mathematical Sciences course list or the following course(s) if completed as part of the Major requirements may fulfill part or all of this requirement: MA 141,241
- <u>Natural Sciences</u> (7 credit hours include one laboratory course or course with a lab)
   <u>Choose from the University approved GEP Natural Sciences course list or the following course(s) if completed as part of the Major requirements may</u> fulfill part or all of this requirement: CH 101, 102, PY 205, 206, 208, 209
- C. <u>Humanities</u> (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: None
- <u>Social Sciences</u> (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: EC 205 or EC 201 or ARE 201
- E. <u>Physical Education/Healthy Living</u> (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)

   X
   Humanities/Social Sciences/Visual and Performing Arts or
   Mathematical Sciences/Natural Sciences/Engineering

   G
   H
   H
   H
   H
- G. Interdisciplinary Perspectives (5-6 credit hours) Choose from 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: E 102
- 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:

### <u>L</u> <u>U.S. Diversity</u>

*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) if completed as part of the Major requirements may fulfill this requirement:* **None** 

J. Global Knowledge

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) if completed as part of the Major requirements may fulfill this requirement: **None** 

K. Foreign Language proficiency - Proficiency at the FL\_102 level is required for graduation.

## **GEP FORMAT B – CURRICULUM REQUIREMENTS**

**Degree Title:** Bachelor of Science in Computer Science

## Current Degree Key: 14CSCBS-14CSCCYSEC

Effective Date of Revision: 7/2021

MAJOR FIELD OF STUDY REQUIREMENTS:		
Required Courses/Groups/ Electives:	Credit Hours	GEP category, if applicable
Indicate with (C-) if course or course groupings have a		List GEP category and hours satisfied by a
C-minus-wall or MGPA requirement		Major requirement
Math Ma 141 (C), MA 241 (C), MA 242	12	Mathematics (6 hours)
MA 305	3	
ST 370	3	
Colorada		
<u>Sciences</u>	А	Natural Sciences (4 hours)
PY 205 (C), PY 206 (C), PY 208, PY 209	8	Natural Sciences (4 hours)
CSC Major	2	
CSC 116 (C)	3	
CSC 217 (C)	5 1	
CSC 226 (C)	3	
CSC 230	3	
CSC 246	3	
CSC 316	3	
CSC 326	4	
CSC 333	3	
CSC 492	3	
Other Major		
GRP 030 Basic Science	3	
(BIO TH, CH 201, MEATH, PB TH, PY 123, PY 124, PY 328, PY 341, PY 401 PY 402 PY 407 PY 411 PY 412 PY 413 PY 414 PY 415 PY		
463, ZO***)		
GRP 033 CSC Restricted Elective	3	
(GRP 031, CSC 236, CSC 302, CSC 312, CSC 342, CSC 401, CSC 402,		
LSC 405, LSC 406, LSC 409, LSC 411, LSC 412, LSC 413, LSC 414, LSC 415 CSC 416 CSC 417 CSC 419 CSC 422 CSC 423 CSC 421 CSC		
<b>433</b> , CSC 440, CSC 441, CSC 442, CSC 450, CSC 451, CSC 453, CSC		
454, CSC 455, CSC 456, CSC 460, CSC 461, CSC 462, CSC 467, CSC		
471, <mark>CSC 472</mark> , CSC 474, CSC 481, CSC 482, CSC 484, CSC 485, <mark>CSC</mark>		
486, CSC 495, CSC 498, CSC 499, CSC 5**, ECE 460, ECE 482, ECE		
483, ISE 441, MA 416)		
GRP 701 Other Restricted Electives II & III	3	
(GRP 033, ACC 307, ACC 310, ACC 311, ACC 320, ACC 330, ACC 340,		
ARS 306, BUS 300, BUS 305, BUS 307, BUS 320, BUS 330, BUS 335,		
BUS 340, BUS 346, BUS 360, BUS 367, BUS 4**, CHE 425, CHE 435,		
CHE 405, CSC 423, CSC 427, CSC 428, EC 3**, EC 4**, EC 5**, ECE 3** (except for ECE 309), ECE 4**, ECE 5**. EMS 480. GC 320. GC		

350, GC 420, GN 411, GN 5**, ISE 307, ISE 308, ISE 311, ISE 361, ISE		
4**, ISE 5**, LOG 335, LOG 435, LOG 535, MA 301, MA 302, MA		
341, MA 351, MA 401, MA 402, MA 403, MA 405, MA 407, MA 408,		
MA 410, MA 412, MA 413, MA 414, MA 416, MA 425, MA 426, MA		
427, MA 428, MA 430, MA 432, MA 435, MA 437, MA 440, MA 5**,		
MAE 3**, MAE 4**, MAE 5**, MIE 3**, MIE 4**, MSE 3**, MSE 4**,		
MSE 5**, MUS 306, NE 3**, NE 4**, NE 5**, OR 5**, PHI 425, PSY		
307, PSY 320, PSY 340, PSY 400, PSY 420, PSY 425, PY 4**, PY 5**, ST		
372, 51 4**, 51 5**)		
ENG 331	3	Satisfies GEP Communication in the Major
		(Advanced Communication) co-requisite.
Concentration Courses/Groups/Electives:		
<u>concentration courses/ droups/ Liectives.</u>		
CSC 236 (C)	3	
CSC 405 (C)	3	
CSC 471 (C)	3	
CSC 472 (C)	3	
CSC 474 (C)	3	
CSC Cybersecurity Restricted Elective (C)	3	
(CSC 414, CSC 415, CSC 433)		
Cybersecurity Topics	3	
(CSC 297)		
Total credit hours under Major Field of Study:	93 hours	
Minimum 27 hours required in program area.	55 110 415	
COLLEGE REQUIREMENTS:		
Orientation Course(s):		
E 101 (C), E 102 (C)	4	Interdisciplinary Perspectives (2 hours)
E 115		E115 satisfies Technology Fluency requirement
Other: (ex: Adv Communication courses)		
Economics Elective (EC 205 or EC 201 or ARE 201)	3	Social Science (3 hours)
Total credit hours under College Requirements:	7 hours	

	At least one of the following must be listed:		
NCSU GENERAL EDUCATION PROGRAM REQUIREMENTS		for this category. <sup>2</sup> Minimum requirements are satisfied by Major/College course requirements. <sup>3</sup> Major/College course requirement satisfies <b>X</b> credit hrs of this	
Courses in the Major and/or Minor may also fulfill a General Educ requirement; however, a GEP category may not be subset to requ specific course from the category list. Required courses must be lis the Major/College requirements.	ation ire a sted in	requirement. Remaining hours required must be chosen from the University Approved GEP course list for the category. <sup>4</sup> Co-requisite is satisfied by a Major/College course requirement. <sup>5</sup> Choose course(s) from the University Approved GEP course lists for the Humanities, Social Sciences, or Visual & Performing Arts.	
Specific courses should not be listed in any of the fields below ot than ENG 101.	*Choose course(s) from the University Approved GEP course lists for the Natural and Mathematical Sciences.		
General Education Program Requirements:	Credit	How will the GEP requirement be met?	
Minimum 39-40 hrs	hours	(choose applicable statement from 1-6 listed above)	

Mathematical Sciences(6 credits)(At least one with MA or ST prefix)Course(s) in the Major may double-count to satisfy this requirement and alsosatisfy both the Global Knowledge and Diversity co-requisites.	x	Minimum requirements are satisfied by Major course requirements.
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 alsosatisfy both the Global Knowledge and Diversity co-requisites.	x	Minimum requirements are satisfied by Major course requirements.
English 101 (C- or better required) (4 credits)	4	ENG 101
Humanities       (6 credits)         (Courses from two different disciplines)       (6 credits)         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 courses from the University Approved GEP course list for this category.
Social Sciences       (6 credits)         (Courses from two different disciplines)       (6 credits)         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       (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 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 (5-6 credits) Only course(s) in the Major may double-count to satisfy this requirement.	3	Required College course satisfies 2 credit hrs of this requirement. Remaining hours required must be chosen from the University Approved GEP course list for the category.
Physical Education/Healthy Living (including one Fitness and Wellness course)(2 credits)	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.	21 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 (USD)	n/a	Choose course(s) from the University Approved GEP course list for this category.
Global Knowledge co-requisite (GK)	n/a	Choose course(s) from the University Approved GEP course list for this category.
Foreign Language Proficiency	n/a	Proficiency at the FL_102 level is required.
The following requirements must be satisfied within the College/Program:		
Communication in the Major (Advanced Communication)	Х	Satisfied by College/Program Requirements.
Technology Fluency	Х	Satisfied by College/Program Requirements.

Total credit hours required to complete Degree		As applicable, indicate here the overall GPA
Total credit nours required to complete Degree:	121 Total hours	requirement for degree completion including course
Total must be within 120-128 credit hours.		completion.

#### GEP FORMAT A (SEMESTER-BY-SEMESTER CURRICULUM DISPLAY)

Current: X Proposed: Effective Semester: 1/2021

#### DEGREE TITLE: B.S. in Computer Science

#### CONCENTRATION TITLE: Cybersecurity

#### CURRENT DEGREE KEY: <u>14CSCBS-14CSCCYSEC</u>

# **FRESHMAN YEAR**

Fall Semester		Credits	Spring Semester		Credits
CH 101	Chemistry – A Molecular Science <sup>1,2,B</sup>	3	CSC 116	Intro. to Computing - Java <sup>2</sup>	3
CH 102	General Chemistry Laboratory <sup>1,2,B</sup>	1	MA 241	Calculus II <sup>1,2,A</sup>	4
E 101	Intro to Engineering & Prob Solving <sup>1,7</sup>	1	PY 205	Physics for Engrs & Sci I <sup>1,2,B</sup>	3
E 115	Intro to Computing Environments <sup>1</sup>	1	PY 206	Physics for Engrs & Sci I Lab <sup>1,2,B</sup>	1
ENG 101	Academic Writing and Research <sup>1,7,H</sup>	4	EC 205	Fund of Econ <sup>D</sup> (or EC 201 or ARE 201)	3
MA 141	Calculus I <sup>1,2,A</sup>	<u>4</u>	E 102	Engineering in the 21st Century <sup>1,2,G</sup>	<u>2</u>
		14			16

# **SOPHOMORE YEAR**

Fall Semester		Credits	Spring	Semester	Credits
CSC 216	Software Development Fundamentals <sup>2</sup>	3	CSC 230	C and Software Tools	3
CSC 217	Software Development Fundamentals Lab <sup>2</sup>	1	CSC 316	Data Structures and Algorithms	3
CSC 226	Discrete Mathematics for CSC <sup>2</sup>	3	CSC 333	Automata, Grammars, and Computability	3
CSC 297	Cybersecurity Topics	1	CSC 297	Cybersecurity Topics	1
MA 242	Calculus III	4	MA 305	Elementary Linear Algebra	3
PY 208	Physics for Engrs & Sci II <sup>B</sup>	3	GEP Requir	ement*	<u>3</u>
PY 209	Physics for Engrs & Sci II Lab <sup>B</sup>	<u>1</u>			16
		16			

# **JUNIOR YEAR**

Fall Semester		Credits	Spring	g Semester	Credits [Variable]
CSC 236	Comp Org & Assem Lang for CSC	3	CSC 326	Software Engineering	4
CSC 246	Operating Systems for CSC	3	CSC 405	Computer Security <sup>2</sup>	3
CSC 474	Network Security <sup>2</sup>	3	CSC 379	Ethics in Computing	1
CSC 297	Cybersecurity Topics	1	ENG 331	Communication for Engr and Tech	3
ST 370	Probability & Statistics for Engrs	3	Health and	Exercise Studies Course <sup>E</sup>	1
GEP Requirement*		<u>3</u>	Other Restr	icted Elective <sup>4</sup>	<u>3</u>
-		16			15

# **SENIOR YEAR**

Fall Semester	Credits	Spring Semester	Credits
CSC 471 Modern Topics in Cybersecurity <sup>2</sup>	3	CSC 472 Cybersecurity Project <sup>2</sup>	3
CSC Cybersecurity Restricted Elective <sup>2,8</sup>	3	CSC Restricted Elective <sup>4</sup>	3
CSC 492 Senior Design Project <sup>5</sup>	3	GEP Requirement*	3
Basic Science Elective <sup>3,B</sup>	3	GEP Requirement*	3
GEP Requirement*	<u>3</u>	Health and Exercise Studies Course <sup>E</sup>	1
•	15		13

## Minimum Credit Hours Required for Graduation 1216,I,J,K

#### Major/Program requirements and footnotes:

<sup>1</sup>Courses required for matriculation (CODA).

<sup>2</sup>Grade of C or higher required.

<sup>3</sup>To be selected from CH 201, PY 123, 124, any PY course with a prerequisite of PY 208, or any PB, BIO, MEA, or ZO course.

<sup>4</sup>For CSC and Other Restricted Electives, see: http://www.csc.ncsu.edu/academics/undergrad/restrict.php.

<sup>5</sup>CSC 492 is the only course that meets this requirement in all CSC curricula effective August 2008 or thereafter.

<sup>6</sup>One of the following two conditions regarding the major GPA is required: 1) the major GPA, which consists of all CSC courses attempted at NCSU, must be 2.0 or higher or 2) a student whose major grade point average is below 2.0 may graduate if no CSC course used to satisfy the major requirements has a grade below a C-. <sup>7</sup>Grade of C- or higher required.

<sup>8</sup>To be selected from CSC 414, CSC 415, or CSC 433.

#### \*<u>General Education Program (GEP) requirements and GEP footnotes:</u>

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 <u>http://www.ncsu.edu/uap/academic-standards/gep/courselists/index.html</u>.

- <u>Mathematical Sciences</u> (6 credit hours one course with MA or ST prefix)
   Choose from the University approved GEP Mathematical Sciences course list or the following course(s) if completed as part of the Major requirements may fulfill part or all of this requirement: MA 141,241
- M. <u>Natural Sciences</u> (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:* CH 101, 102, PY 205, 206, 208, 209
- <u>N.</u> <u>Humanities</u> (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: **None**
- <u>Social Sciences</u> (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: EC 205 or EC 201 or ARE 201
- P. Physical Education/Healthy Living (2 credit hours at least one 100-level Fitness and Wellness Course) Choose from the University approved GEP Physical Education/Healthy Living course list.
- Q.
   Additional Breadth
   (3 credit hours to be selected from the following checked University approved GEP course lists)

   \_\_\_\_\_\_X\_\_\_Humanities/Social Sciences/Visual and Performing Arts or \_\_\_\_\_\_Mathematical Sciences/Natural Sciences/Engineering

   \_\_\_\_\_\_R\_\_\_\_Interdisciplinary Perspectives (5-6 credit hours)
- <u>R.</u> <u>Interdisciplinary Perspectives</u> (5-6 credit hours) Choose from 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: E 102
- <u>S.</u> <u>Introduction to Writing</u> (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:

#### <u>T.</u> <u>U.S. Diversity</u>

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) if completed as part of the Major requirements may fulfill this requirement: **None** 

<u>U.</u> <u>Global Knowledge</u>

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) if completed as part of the Major requirements may fulfill this requirement: **None** 

<u>V.</u> <u>Foreign Language proficiency</u> - Proficiency at the FL\_102 level is required for graduation.

## **GEP FORMAT B – CURRICULUM REQUIREMENTS**

**Degree Title:** Bachelor of Science in Computer Science

### Current Degree Key: 14CSCBS-14CSCCYSEC

## Effective Date of Revision: 1/2021

MAJOR FIELD OF STUDY REQUIREMENTS:		
Required Courses/Groups/ Electives:	Credit Hours	GEP category, if applicable
Indicate with (C-) if course or course groupings have a		List GEP category and hours satisfied by a
C-minus-wall or MGPA requirement		Major requirement
$\frac{\text{Math}}{\text{MA}(C)} = MA(241)(C) = MA(242)$	10	Mathematics (Chaura)
MA 141 (C), MA 241 (C), MA 242	12	Mathematics (6 hours)
	3	
51 370	3	
Sciences		
<u>Sciences</u> CH 101 (C) CH 102 (C)	4	Natural Sciences (4 hours)
PY 205 (C) PY 206 (C) PY 208 PY 209	4 8	Natural Sciences (4 hours)
	0	Natural Sciences (4 nours)
CSC Major		
CSC 116 (C)	3	
CSC 216 (C)	3	
CSC 217 (C)	1	
CSC 226 (C)	3	
CSC 230	3	
CSC 236	3	
CSC 246	3	
CSC 316	3	
CSC 326	4	
CSC 333	3	
CSC 379	1	
CSC 492	3	
Other Major		
GRP 030 Basic Science	3	
(BIO***, CH 201, MEA***, PB***, PY 123, PY 124, PY 328, PY 341,		
PY 401, PY 402, PY 407, PY 411, PY 412, PY 413, PY 414, PY 415, PY		
463, ZO***)		
GPD 033 CSC Restricted Elective	2	Satisfies GEP Communication in the Major
(GRP 031 CSC 302 CSC 312 CSC 342 CSC 401 CSC 402 CSC 405	5	(Advanced Communication) co-requisite
(SIN 051, CSC 502, CSC 512, CSC 542, CSC 401, CSC 402, CSC 405, CSC 405, CSC 406, CSC 409, CSC 411, CSC 412, CSC 413, CSC 415, CSC 416, CSC		(Advanced communication) co requisite.
417. CSC 419. CSC 422. CSC 431. CSC 440. CSC 441. CSC 450. CSC		
451, CSC 453, CSC 454, CSC 455, CSC 456, CSC 460, CSC 461, CSC		
462, CSC 467, CSC 471, CSC 474, CSC 481, CSC 482, CSC 484, CSC		
485, CSC 495, CSC 499, CSC 5**, ECE 460, ECE 482, ECE 483, ISE 441,		
MA 416)		
GRP 701 Other Restricted Electives II & III	3	
(GRP 033, GRP 702, ACC 307, ACC 310, ACC 311, ACC 320, ACC 330,		
ACC 340, ARS 306, BUS 300, BUS 305, BUS 307, BUS 320, BUS 330,		
BUS 335, BUS 340, BUS 346, BUS 360, BUS 367, BUS 4**, CHE 425,		
CHE 435, CHE 465, CSC 423, CSC 427, CSC 428, EC 3**, EC 4**, EC		
5**, ECE 3** (except for ECE 309), ECE 4**, ECE 5**, EMS 480, GC		
320, GC 350, GC 420, GN 411, GN 5**, ISE 307, ISE 308, ISE 311, ISE		

361, ISE 4**, ISE 5**, LOG 335, LOG 435, LOG 535, MA 301, MA 302,		
MA 341, MA 351, MA 401, MA 402, MA 403, MA 405, MA 407, MA		
408, MA 410, MA 412, MA 413, MA 414, MA 416, MA 425, MA 426,		
MA 427, MA 428, MA 430, MA 432, MA 435, MA 437, MA 440, MA		
5**, MAE 3**, MAE 4**, MAE 5**, MIE 3**, MIE 4**, MSE 3**, MSE		
4**. MSE 5**. MUS 306. NE 3**. NE 4**. NE 5**. OR 5**. PHI 425.		
PSY 307. PSY 320. PSY 340. PSY 400. PSY 420. PSY 425. PY 4**. PY		
5**. ST 372. ST 4**. ST 5**)		
ENG 331	3	
Concentration Courses/Groups/Electives:		
CSC 405 (C)	3	
CSC 471 (C)	3	
CSC 472 (C)	3	
CSC 474 (C)	3	
	-	
CSC Cybersecurity Restricted Elective (C)	3	
(CSC 414, CSC 415, CSC 433)	-	
Cybersecurity Topics	3	
(CSC 297)	0	
Total credit hours under Major Field of Study:		
Minimum 27 hours required in program grog	93 hours	
Minimum 27 nours required in program area.		
COLLEGE REQUIREMENTS:		
Orientation Course(s):	4	
E 101 (C), E 102 (C)	4	Interdisciplinary Perspectives (2 nours)
E 115		E115 satisfies Technology Fluency requirement
Other: (ex: Adv Communication courses)		
Economics Elective (EC 205 or EC 201 or ARE 201)	3	Social Science (3 hours)
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 Educ requirement; however, a GEP category may not be subset to requ specific course from the category list. Required courses must be list the Major/College requirements. Specific courses should not be listed in any of the fields below of than ENG 101	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.		
General Education Program Requirements:	Credit	How will the GEP requirement be met?	
Minimum 39-40 hrs	hours	(choose applicable statement from 1-6 listed above)	
Mathematical Sciences(6 credits)(At least one with MA or ST prefix)Course(s) in the Major may double-count to satisfy this requirement and alsosatisfy both the Global Knowledge and Diversity co-requisites.	х	Minimum requirements are satisfied by Major course requirements.	

Natural Sciences 17 cred	dits)			
(At least 1 lab course or course with a lab)		Minimum requirements are satisfied by Major course		
(nurse(s) in the Major may double-count to satisfy this requirement and c	X	requirements		
satisfy both the Global Knowledge and Diversity co-requisites				
English 101 (C- or better required) (A cred	tits)			
	4	ENG 101		
Humanities (6 cred	lits)	Choose courses from the University Approved GEP course		
(Courses from two different disciplines)		list for this category.		
Course(s) in the Major may double-count to satisfy this requirement and a	also			
satisfy both the Global Knowledge and Diversity co-requisites.				
Social Sciences (6 crea	lits)	Required College course satisfies 3 credit hrs of this		
(Courses from two different disciplines)	2	requirement. Remaining hours required must be chosen		
Course(s) in the Major may double-count to satisfy this requirement and a	also 3	from the University Approved GEP course list for the		
satisfy both the Global Knowledge and Diversity co-requisites.		category.		
Additional Breadth (3 cred	dits)			
(Choose approach that is different from the approach of the Major)		Choose course(s) from the University Approved GEP course		
Major/College requirements cannot satisfy this requirement and an AB co	ourse 3	lists for the Humanities, Social Sciences or Visual and		
cannot be double-counted except in satisfying the Global Knowledge and		Performing Arts.		
Diversity co-requisites.				
Interdisciplinary Perspective (5-6 cred	dits)	Required College course satisfies 2 credit hrs of this		
Only course(s) in the Major may double-count to satisfy this requirement.	2	requirement. Remaining hours required must be chosen		
	5	from the University Approved GEP course list for the		
		category.		
Physical Education/Healthy Living (2 credi	its)	Choose course(s) from the University Approved GEP course		
(including one Fitness and Wellness course)	2	list for this category.		
Total credit hours needed to complete GEP that are not	21	1.		
satisfied as part of the Major/College requirements.	hours			
		Courses taken in the Major GEP, or Minor may double-count to		
		Courses taken in the wajor, GLP, or winter may aduble-count to		
		fulfill the co-requisites Courses that satisfy the U.S. Diversity* or		
GEP Co-Requisites:		fulfill the co-requisites. Courses that satisfy the U.S. Diversity* or Global Knowledge** co-requisite are marked on course lists		
GEP Co-Requisites:		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.		
GEP Co-Requisites:	(50)	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. Choose course(s) from the University Approved GEP course		
GEP Co-Requisites: U.S. Diversity co-requisite (L	<sup>JSD)</sup> n/a	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.       Choose course(s) from the University Approved GEP course         list for this category.       Choose course(s)		
GEP Co-Requisites:	JSD) n/a	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.         Choose course(s) from the University Approved GEP course         list for this category.         Choose course(s) from the University Approved GEP course		
GEP Co-Requisites: U.S. Diversity co-requisite (U Global Knowledge co-requisite	<sup>JSD)</sup> n/a ( <sup>GK)</sup> n/a	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.         Choose course(s) from the University Approved GEP course         list for this category.         Choose course(s) from the University Approved GEP course         list for this category.         Choose course(s) from the University Approved GEP course         list for this category.		
GEP Co-Requisites: U.S. Diversity co-requisite (U Global Knowledge co-requisite (U Foreign Language Proficiency	<sup>JSD)</sup> n/a (GK) n/a	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.         Choose course(s) from the University Approved GEP course         list for this category.         Choose course(s) from the University Approved GEP course         list for this category.         Choose course(s) from the University Approved GEP course         list for this category.         Proficiency at the FL 102 level is required.		
GEP Co-Requisites: U.S. Diversity co-requisite (U Global Knowledge co-requisite ( Foreign Language Proficiency	<sup>JSD)</sup> n/a ( <sup>GK)</sup> n/a n/a	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.         Choose course(s) from the University Approved GEP course         list for this category.         Choose course(s) from the University Approved GEP course         list for this category.         Proficiency at the FL_102 level is required.		
GEP Co-Requisites: U.S. Diversity co-requisite (L Global Knowledge co-requisite (L Foreign Language Proficiency The following requirements must be satisfied within the	<sup>JSD)</sup> n/a ( <sup>GK)</sup> n/a n/a	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.         Choose course(s) from the University Approved GEP course         list for this category.         Choose course(s) from the University Approved GEP course         list for this category.         Proficiency at the FL_102 level is required.		
GEP Co-Requisites: U.S. Diversity co-requisite Global Knowledge co-requisite Foreign Language Proficiency The following requirements must be satisfied within the College/Program:	<sup>JSD)</sup> n/a ( <sup>GK)</sup> n/a n/a	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.         Choose course(s) from the University Approved GEP course         list for this category.         Choose course(s) from the University Approved GEP course         list for this category.         Proficiency at the FL_102 level is required.		
GEP Co-Requisites: U.S. Diversity co-requisite (U Global Knowledge co-requisite (U Foreign Language Proficiency The following requirements must be satisfied within the College/Program: Communication in the Major (Advanced Communication)	<sup>JSD)</sup> n/a (GK) n/a n/a N/a X	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.         Choose course(s) from the University Approved GEP course         list for this category.         Choose course(s) from the University Approved GEP course         list for this category.         Proficiency at the FL_102 level is required.         Satisfied by College/Program Requirements.		
GEP Co-Requisites: U.S. Diversity co-requisite (L Global Knowledge co-requisite (L Foreign Language Proficiency The following requirements must be satisfied within the College/Program: Communication in the Major (Advanced Communication) Technology Fluency	<sup>JSD)</sup> n/a ( <sup>GK)</sup> n/a n/a N/a X	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.         Choose course(s) from the University Approved GEP course         list for this category.         Choose course(s) from the University Approved GEP course         list for this category.         Proficiency at the FL_102 level is required.         Satisfied by College/Program Requirements.         Satisfied by College/Program Requirements.		
GEP Co-Requisites: U.S. Diversity co-requisite (U Global Knowledge co-requisite (U Foreign Language Proficiency The following requirements must be satisfied within the College/Program: Communication in the Major (Advanced Communication) Technology Fluency	<sup>JSD)</sup> n/a (GK) n/a n/a N/a X X	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.         Choose course(s) from the University Approved GEP course         list for this category.         Choose course(s) from the University Approved GEP course         list for this category.         Proficiency at the FL_102 level is required.         Satisfied by College/Program Requirements.         Satisfied by College/Program Requirements.		
GEP Co-Requisites: U.S. Diversity co-requisite (U Global Knowledge co-requisite (U Foreign Language Proficiency The following requirements must be satisfied within the College/Program: Communication in the Major (Advanced Communication) Technology Fluency	<sup>JSD)</sup> n/a (GK) n/a n/a N/a X X X	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.         Choose course(s) from the University Approved GEP course         list for this category.         Choose course(s) from the University Approved GEP course         list for this category.         Proficiency at the FL_102 level is required.         Satisfied by College/Program Requirements.         Satisfied by College/Program Requirements.		
GEP Co-Requisites: U.S. Diversity co-requisite (U Global Knowledge co-requisite (U Foreign Language Proficiency The following requirements must be satisfied within the College/Program: Communication in the Major (Advanced Communication) Technology Fluency Total credit hours required to complete Degree:	<sup>JSD)</sup> n/a (GK) n/a n/a X X X	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.         Choose course(s) from the University Approved GEP course         list for this category.         Choose course(s) from the University Approved GEP course         list for this category.         Proficiency at the FL_102 level is required.         Satisfied by College/Program Requirements.         Satisfied by College/Program Requirements.		

completion.

### Routing for DASA or Graduate School Approval of Other Degree Program Actions

**Type of Action:** Enter "X" for Action Type(s) and list Title and Prefix(s) as indicated

nor / Concentration
sed Minor / Concentration Title
Change in Minor / Concentration Title
XChange in Curricular/Program Requirements
ctive Date: _8/1/2021 Program Contact: Lesley Hubbard
Code (see <a href="https://nces.ed.gov/ipeds/cipcode/default.aspx?y=55">https://nces.ed.gov/ipeds/cipcode/default.aspx?y=55</a> ): 14.0501
tion: Indicate date when the following occurs oposal Department Head endorses* College Curriculum Committee (undergraduate or graduate) recommends* College Dean endorses*
res to Undergraduate or Graduate office for routing
Recommended by Vice Provost, DELTA, if applies <sup>*</sup> Associate Deans Council <b>or</b> Graduate Operations Council informed University Courses & Curriculum Committee <b>or</b> Administrative Board of the Graduate School recommends Dean (Graduate School or DASA) approves <sup>*</sup>

\* Signature is required on the signature page for the action

#### 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:

Ra

Head, Department/Program

### March 29, 2021

Date

### **Recommended By:**

Chair, College Curriculum Committee	Date
Endorsed By: Jerome P. Favelle	April 20,2021
College Dean	Date
Proposal moves to Undergraduate or Graduate office Recommended By:	⊔ ce for routing
Vice Provost, DELTA (if DE degree/certificate)	Date
Recommended By:	
Chair, University Courses & Curricula Committee	Date

Approved By:

Dean, DASA or the Graduate School

or Administrative Board of the Graduate School

## NORTH CAROLINA STATE UNIVERSITY

### HONORS PROGRAM ACTION FORM

#### DEPARTMENT/COLLEGE: Biomedical Engineering

#### TITLE OF PROGRAM: Biomedical Engineering Honors Program

TYPE OF PROPOSAL: New Program		DATE OF LAST ACTION: 8/1/2012
Review		
Revision in:		
Admission Requirements	x	PROPOSED EFFECTIVE DATE: 8/1/2021
Graduation Requirements	x	
Description	x	
Discontinuation of Program		

#### ATTACH DOCUMENTS AS APPROPRIATE:

x Current Admissions Requirements

x Current Graduation Requirements

x Current Catalog Description

x Proposed Revision (s) with Reasons

x Number of Participants for last five years

CATALOG DESCRIPTION (limit to 150 words):

Biomedical Engineering students who want to expand their knowledge of the field through advanced study and independent research may earn departmental honors. Students in the program write a thesis based on the cumulative experience gained from two complete semesters of independent research in addition to completing one BME course for honors credit or at a graduate level. A successful thesis defense to a group of three faculty members results in the designation of Honors in Biomedical Engineering noted on the student's transcript.

NAME OF PROGRAM DIRECTOR:

Lianne Cartee	, Teaching	Professor,	Joint Dep	partment o	f Biomedical	Engineering	, Box 7115,	Raleigh	, NC 27695
919-515-6726	-								

(Rank, Address, Phone)

**RECOMMENDED BY:** 

APPROVED EFFECTIVE DATE:

Department Head (*if Departmental Program*)

or

March 29, 2021

Date

Date

College Honors Program Director (if College Program) APPROVAL:

David W. Parish Chair, College Courses & Curricula Committee Or College Honors Program Committee

21 April 2021

Date

College Dean	Date
Chair, University Courses & Curricula Committee	Date

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

### Biomedical Engineering Honors Program revised 2021

Proposed Catalog description: Biomedical Engineering students who want to expand their knowledge of the field through advanced study and independent research may earn departmental honors. Students in the program write a thesis based on the cumulative experience gained from two complete semesters of independent research in addition to completing one BME course for honors credit or at a graduate level. A successful thesis defense to a group of three faculty members results in the designation of Honors in Biomedical Engineering noted on the student's transcript.

Proposed Admission to the program: Students who wish to undertake a senior honors thesis project must have met the pre-requisites for senior design and have a cumulative GPA of 3.3 or higher. Students whose GPA is close to the eligibility standard and who have a reasonable chance of meeting the requirement within a semester of additional coursework may begin a senior honors thesis project on a probationary basis. Such exceptions must be approved in advance by the BME Director of Undergraduate Research. Students who fail to raise their GPAs to meet the standard at the end of the probationary semester may not continue as candidates for graduation with honors or highest honors. They should receive graded course credit for the work completed and may, at the discretion of the BME Undergraduate Research Committee, continue their projects in the 2<sup>nd</sup> semester as an independent study. Students who continue on that basis are not eligible to graduate with BME honors.

**Proposed Graduation Requirements:** 

- Seminar Attendance: Students will attend 2 seminars each semester from the BME seminar series or other approved seminars for 2 semesters.
- Advanced Study Course: Complete a 300 or higher level BME course for student-initiated or faculty-initiated honors or complete a graduate-level course that counts toward the undergraduate degree. The advanced study course should be completed with a grade of B or better.
- Independent Research: Complete BME 491 and BME 492 both with a grade of B or better.
- Thesis Defense: Write a senior thesis based on the work completed in BME 491 and BME 492 and successfully defend it before a committee of three scholars. At least two of the committee members must be faculty members, but one may be a graduate student. It is recommended, but not required, that one of the thesis committee members be from outside the BME department. A successful defense is when all three committee members unanimously agree the thesis merits honors credit.

Current Admissions Requirements: Students with a cumulative GPA greater than 3.75 who have completed 3 BME courses and a minimum of 9 credit hours in BME will be invited to join the Biomedical Engineering Honors Program.

Current Graduation Requirements: To graduate with the distinction of Biomedical Engineering Honors, the student must have an overall GPA of 3.25 and make a grade of B or better in each of the following:

- Faculty- or student-initiated honors requirements approved by the honors program completed for 2 of the required courses from the list below. Here are links to the forms for a <u>student-initiated honors contract</u> or for a <u>faculty-initiated honors contract</u>
  - o BME 301
  - o BME 302
  - o BME 311
  - o BME 451
  - o BME 452
- One 500-level course substituted for the required 400 level course as listed below
  - o BME 525 instead of BME 425
  - o BME 541 instead of BME 441
  - o MSE 791-005 instead of BME 466
- A 400- or 500-level math or basic science course
- Students will attend 2 seminars each semester from the BME seminar series or other approved seminars for 4 semesters.

Current Catalog Description: The Biomedical Engineering Honors Program is designed to attract a select, highly motivated group of students who seek a more in-depth education in Biomedical Engineering. Students in the program will engage in rigorous study and advanced coursework and will be exposed to current topics in Biomedical Engineering. The program is designed to prepare students for continued education in medicine and engineering and to recognize their achievements. Interested students should contact the BME Student Services Coordinator for information and application materials.

Proposed Revisions with Reasons: When the BME Departmental Honors program was initially established, the faculty wanted to include a research requirement, but, at the time, the department did not have sufficient faculty members to accommodate all interested undergraduates. Since the program was established, the department faculty size has increased substantially and can now support the additional undergraduate research needed for this program. In addition, since the initial program was established, the Joint Undergraduate Program in Biomedical Engineering has been established, and the program has students based at both NC State and UNC. The proposed modifications in the program will balance the requirements to earn departmental honors credit across the two campuses.

Enrollment over the past 5 years:

CLASS OF	# Participants
2017	10
2018	9
2019	7
2020	10
2021	4

### NC STATE UNIVERSITY

TO: Office of the Dean for Academic and Student Affairs

FROM: Lisa Parks, Director of Undergraduate Programs, BS in Biological Sciences

RE: Updates to 17BIOSCBS (no concentration)

DATE: 12 March 2021

Proposed effective date: June 2021

### Proposed changes and justification

This memo proposes the following changes to the 17BIOSCBS curriculum (no subplan). Formats A and B are attached. In Format A, we have also indicated associated changes to the 8-semester display and edits to the footnotes that are needed based on earlier actions or just for clarification. We would not object to removing all footnotes and letting the degree audit provide that information.

Section	Changes	Justification
Biological	Add requirement: BIO 270	New course developed specifically for this
Sciences	Introduction to Evolution (+3 cr)	curriculum.
Biological	Remove "Biochemistry"	Making space for the new core foundational
Sciences	requirement (-4 cr)	requirement of BIO 270; students who need
		a biochemistry course for professional school
		requirements can take it as an elective.
Major Electives	Confirm that BCH 351 and BCH	(We think they are there, but sometimes it
	451 are on the "Additional	depends on how we pull the list.)
	Science and Math" electives list	
Life Science	Add BIO 240 and BIO 245 to the	These courses were created a while ago and
Electives	"Organismal Function" list	should be on this list.
Life Science	Add BIO 323 to the "Ecology &	New course
Electives	Evolution" list	
Free Electives	Increase Free Electives from 9	Necessary to keep total credit hours at 120
	to 10 cr (+1 cr)	

### SIGNATURES:

arolyn Mattinge 3/30/2021 rtment of Biological Sciences Head, Dec Date

Date

Chai

, Sciences Curriculum Committee
Maria Oliver-Hoyo	04/06/ <b>202</b> 4 te	ext here
Associate Dean of Academic Affairs, COS	Date	-
		PROPOS
Chair, University Courses & Curricula Con	nmittee Date	-
		APPRO
Dean, Academic and Student Affairs	Date	-

SED EFFECTIVE DATE: \_\_\_\_\_June 2021\_\_

\_\_\_\_\_

VED EFFECTIVE DATE: \_\_\_\_\_\_

# Proposed Semester-by-Semester Display (Format A) – additions and deletions are highlighted

# PROPOSED EFFECTIVE SEMESTER: 6/2021

DEGREE TITLE: <u>B.S. in Biological Sciences</u> CURRENT DEGREE KEY: <u>17BIOSCBS</u>

FRESHMAN YEAR					
Fall Semester	Credits		Spring Semester	Credits	
LSC 101 Critical Creative Thinking Life Sci*	2		BIO 183 Intro Bio: Cellular & Molecular	4	
BIO 181 Intro Bio: Ecol, Evol, Biodiv	4		CH 221 Organic Chemistry I	3	
CH 101 Chemistry-A Molecular Science	3		CH 222 Organic Chemistry I Lab	1	
CH 102 General Chemistry Lab	1		ENG 101 Acad Writing & Research*	4	
MA 131 <sup>1</sup> Calculus Life & Mgmt Sci. A	3		MA 231 <sup>1</sup> Calculus Life & Mgmt Sci. B	3	
LSC 103 Exploring Opportunities Life Sci	1				
GEP Health and Exercise Studies Req*	1				
	Total:			Total:	
	15			15	

## SOPHOMORE YEAR

Fall Semester	Credits	Spring Semester	Credits
Physiology Requirement <sup>2</sup>	3	GN 311 Principles of Genetics	4
CH 223 Organic Chemistry II	3	GN 312 or 412 Elementary Genetics Lab	1
CH 224 Organic Chemistry II Lab	1	Sci & Math Elective <sup>3</sup>	4
BIO 270 Intro to Evolution	3	CH 201 Chemistry-A Quantitative Sci.	3
Free Elective <sup>3</sup>	3	CH 202 Quantitative Chemistry Lab	1
GEP Social Sciences Requirement*	3	GEP Interdisciplinary Perspectives Reqt*	3
GEP Health and Exercise Studies Req*	1	GEP Humanities Requirement*	3
	Total: 14		Total: 14

## JUNIOR YEAR

Fall Semester	Credits	Spring Semester	Credits
PY 211 <sup>4</sup> College Physics I	4	PY 212 <sup>4</sup> College Physics II	4
MB 351 General Microbiology	3	BCH 351 or 451 Biochemistry	4
MB 352 or 354 Microbiology Lab	1	Life Science Elective <sup>7</sup>	4
Advanced Writing Requirement <sup>5</sup>	3	GEP Social Sciences Requirement*	3
Learning Experience Elective <sup>6</sup>	3	GN 311 Principles of Genetics	4
		GN 312 Elementary Genetics Lab	1
	Total: 14		Total: <mark>16</mark>

# SENIOR YEAR

Fall Semester	Credits	Spring Semester	Credits
Life Science Elective <sup>7</sup>	3	Life Science Elective <sup>7</sup>	4
Life Science Elective <sup>7</sup>	3	Sci & Math-Elective <sup>83</sup>	3
Sci & Math Elective <sup>8</sup>	4	Free Elective <sup>38</sup>	3
Sci & Math Elective <sup>83</sup>	3	GEP Additional Breadth Requirement*	3
Free Elective <sup>38</sup>	3	GEP Humanities Requirement*	3
Free Elective <sup>8</sup>	<mark>4</mark>		
	<i>Total:</i> 16		<i>Total:</i> 16

Minimum Credit Hours Required for Graduation: 120

## Major/Program Footnotes:

A grade of C- or better is required in the following courses: LSC 101 Critical and Creative Thinking in the Life Sciences BIO 181 Introductory Biology: Ecology, Evolution, and Biodiversity BIO 183 Introductory Biology: Cellular and Molecular Biology BIO 270 Introduction to Evolution GN 311 Principles of Genetics GN 312 Elementary Genetics Lab MB 351 General Microbiology MB 352 or 354 Microbiology Lab BCH 351 or 451 Biochemistry Physiology Requirement

MA 131 Calculus for Life and Management Sciences A MA 231 Calculus for Life and Management Sciences B CH 101/102 Chemistry – A Molecular Science & Lab CH 221/222 Organic Chemistry I & Lab CH 223/224 Organic Chemistry II & Lab CH 201/202 Chemistry – A Quantitative Science & Lab PY 211 College Physics I PY 212 College Physics II

Life Science Electives Advanced Writing Requirement ENG 101 Academic Writing & Research

Taking courses for credit only (S/U): only PE, Free Electives and courses offered only for S/U credit can be applied to graduation requirements. Students should check with their adviser before electing to take any course that normally is graded A-F as an S/U course.

<sup>1</sup>*Mathematics Alternatives* MA 141 and MA 241 are suitable substitutes for MA 131 and MA 231.

<sup>2</sup>Physiology Requirement (take <u>one</u> of the following options)
 <sup>2</sup>Physiology Requirement
 Select a course from the list of course options provided on your degree audit.

<sup>3</sup>*Additional Science & Math Electives (take 10 credit hours)* 

Choose courses from the list of course options provided on your degree audit. Students interested in graduate school or professional school should check the courses require for admission to the programs to which they plan to apply.

<sup>3</sup>Free Electives (take 9 credit hours)

These electives cannot be remedial nor can they be taken at an elementary level after you have taken comparable coursework at a more advanced level. Students interested in graduate school or professional school should check the courses require for admission to the programs to which they plan to apply.

<sup>4</sup>*Physics Alternatives* 

PY 205 and PY 208 OR PY 201 and PY 202 can be substitutes for PY 211 and PY 212. <del>PY 205 and PY 208</del> These alternatives are calculus-based and require that you take the 40 series of Mathematics (MA 141 and MA 241). <del>PY 201 and PY 202 would also be a suitable substitute for PY 211 and PY 212. PY 201 and PY 202 are calculus based, require the 40 series of Mathematics1, and are restricted to students in PAMS.</del>

<sup>5</sup>Advanced Writing Requirement (take <u>one</u> course)
 <sup>5</sup>Advanced Writing Requirement
 Select a course from the list of course options provided on your degree audit.

# <sup>6</sup>Learning Experience Elective (take <u>one</u> course for 3 credit hours)

Learning experience in an appropriate area, with prior approval by faculty adviser, prospective supervisor, and departmental undergraduate coordinator. Contact and arrangements with prospective supervisors is the responsibility of the student.

-BIO 492 External Learning Experience

BIO 493 Special Problems in Biological Sciences

BIO 499 Biology Honors Project, Part 2 (BIO 498 required)

**BSC 492 Professional Experience** 

BSC 493 Research Experience

BSC 494 Teaching Experience

GN 425 Advanced Genetics Laboratory

MB 360 Scientific Inquiry in Microbiology: At the Bench

<sup>7</sup>*Life Science Electives (take 14 credit hours)* 

Select one option from each of the following four Groups for a total of at least 14 credit hours.

<sup>7</sup>*Life Science Electives (take 14 credit hours)* 

Select courses from the lists of course options provided on your degree audit – take at least one course from each category.

### <sup>8</sup>*Free Electives (take 10 credit hours)*

These electives cannot be remedial nor can they be taken at an elementary level after you have taken comparable coursework at a more advanced level. Students interested in graduate school or professional school should check the courses require for admission to the programs to which they plan to apply.

#### Restricted Electives (take 10 credit hours)

NOTE: There is a footnote on the website for "Restricted Electives" – this category was removed from our curricula some time ago (when we moved to the College of Sciences). Please remove this footnote from the website.

## <sup>9</sup>Additional Science & Math Electives (take 10 credit hours)

# \*<u>General Education Program (GEP) requirements and GEP Footnotes:</u>

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 <u>http://www.ncsu.edu/uap/academic-standards/gep/courselists/index.html</u>.

**Introduction to Writing: ENG 101** (4 credit hours with a C- or better) *Must be taken during the first year.* 

Mathematical Sciences (6 credit hours – one course with MA or ST prefix)

*In Biological Sciences, this GEP requirement is met through the Major course requirements.* **Natural Sciences** (7 credit hours – include one laboratory course or course with a lab)

In Biological Sciences, this GEP requirement is met through the Major course requirements.

Humanities (6 credit hours selected from two different disciplines/course prefixes)

Choose from the University approved GEP Humanities course list. Some courses on this list will also meet the U.S. Diversity or Global Knowledge co-requisites.

**Social Sciences** (6 credit hours selected from two different disciplines/course prefixes) Choose from the University approved GEP Social Sciences course list. Some courses on this list will also meet the U.S. Diversity or Global Knowledge co-requisites.

**Physical Education/Healthy Living** (2 credit hours – at least one 100-level Fitness and Wellness Course)

Choose from the University approved GEP Physical Education/Healthy Living course list. Additional Breadth - (3 credit hours)

Choose from the University approved GEP Humanities course list or the GEP Social Sciences course list or the GEP Visual & Performing Arts course list. Some courses on this list will also meet the U.S. Diversity or Global Knowledge co-requisites.

**Interdisciplinary Perspectives** (5 credit hours)

In Biological Sciences, 2 credit hours of this GEP requirement is met through Major course requirements. For the remaining 3 credit hours, choose from the University approved GEP Interdisciplinary Perspectives course list. Some courses on this list will also meet the U.S. Diversity or Global Knowledge co-requisites.

The following **Co-Requisites** must be satisfied to complete the General Education Program requirements:

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. 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. Foreign Language proficiency - Proficiency at the FL\_102 level is required for graduation.

# **List of Requirements (Format B)**

# **CURRICULUM REQUIREMENTS**

Format B

Degree Title: BS in Biological Sciences

#### Current Degree Key: 17BIOSCBS

## Effective Date of Revision: 1 June 2021

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
Required CoursesLSC 101 Critical and Creative Thinking in the Life Sciences*BIO 181 Intro Bio: Ecology, Evolution, & Biodiversity*BIO 183 Intro Bio: Cellular and Molecular Biology*BIO 270 Intro to Evolution*GN 311 Principles of Genetics*GN 312 Elementary Genetics Lab*MB 351 General Microbiology*MB 352 or 354 Microbiology Lab*BCH 351 or 451 Biochemistry*	2 4 3 4 1 3 1 4	Interdisciplinary Perspectives (2 cr) Natural Sciences (4 cr) Natural Sciences (3 cr)
CH 101 Chemistry – A Molecular Science* CH 102 General Chemistry Lab* CH 221 Organic Chemistry I * CH 222 Organic Chemistry I Lab* CH 223 Organic Chemistry II Lab* CH 224 Organic Chemistry II Lab* CH 201 Chemistry – A Quantitative Science * CH 202 Quantitative Chemistry Lab * MA 131 <sup>1</sup> Calculus for Life and Management Sciences A* MA 231 <sup>1</sup> Calculus for Life and Management Sciences B * PY 211 <sup>4</sup> College Physics I * PY 212 <sup>4</sup> College Physics II *	3 1 3 1 3 1 3 1 3 4 4	Mathematical Sciences (3 cr) Mathematical Sciences (3 cr)
Physiology Requirement* Advanced Writing Requirement* Learning Experience Elective Life Science Electives* Additional Science & Math Electives *C- or better required in these courses	3 3 3 14 10	
<b><u>Free Electives</u></b> : EXC 900 - Free Electives <sup>3</sup>	<mark>9</mark> 10	
Total credit hours under Major Field of Study: Minimum 27 hours required in program area.	<b>95</b> hours	
COLLEGE REQUIREMENTS:		
Orientation Course(s): LSC 103 Exploring Opportunities in the Life Sciences	1	

<b>NCSU GENERAL EDUCATION PROGRAM</b> REQUIREMENTS Courses in the Major and/or Minor may also fulfill a General E requirement; however, a GEP category <u>may not be subset</u> to re specific course from the category list. Required courses must b the Major/College requirements. Specific courses should not be listed in any of the fields below than ENG 101.	<ul> <li>At least one of the following must be listed:</li> <li>Choose course(s) from the University Approved GEP course list for this category.</li> <li>Minimum requirements are satisfied by Major/College course requirements.</li> <li>Major/College course requirement satisfies <u>X</u> credit hrs of this requirement. Remaining hours required must be chosen from the University Approved GEP course list for the category.</li> <li>Co-requisite is satisfied by a Major/College course requirement.</li> <li>Choose course(s) from the University Approved GEP course lists for the Humanities/ Social Sciences/ Visual &amp; Performing Arts.</li> <li>Choose course(s) from the University Approved GEP course lists for Natural Sciences/Mathematical Sciences.</li> </ul>	
Minimum 39-40 hrs	hours	(Choose applicable statement from 1-6 listed above)
Mathematical Sciences       (6 credit         (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.	x X	Minimum requirements are satisfied by Major course requirements.
Natural Sciences       (7 credi         (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.	X	Minimum requirements are satisfied by Major course requirements.
English 101 (C- or better required) (4 credit	<sup>s)</sup> 4	ENG 101
Humanities       (6 credit         (Courses from two different disciplines)       (6 credit         Course(s) used to satisfy this requirement can also satisfy either the Global       (6 credit         Knowledge or U.S. Diversity co-requisites.       (6 credit	<i>s)</i> 6	Choose courses from the University-approved GEP course list for Humanities.
Social Sciences       (6 credi         (Courses from two different disciplines)         Course(s) used to satisfy this requirement can also satisfy either the Global         Knowledge or U.S. Diversity co-requisites.	<i>s)</i> 6	Choose courses from the University-approved GEP course list for Social Sciences.
Additional Breadth (AB) (3 credi (Choose approach that is different from the approach of the Major) An AB course cannot be double-counted except in satisfying the Global Knowledge of U.S. Diversity co-requisites.	- 3	Choose course(s) from the University-approved GEP course lists for the Humanities/Soc Sciences/Visual & Performing Arts
Interdisciplinary Perspectives       (5-6 credits)         Course(s) used to satisfy this requirement can also satisfy either the Global       8         Knowledge or U.S. Diversity co-requisites.       3		Two credits are satisfied by Major course requirements. For the remaining 3 credits, choose a course from the University-approved GEP course list for Interdisciplinary Persp.
Physical Education/Healthy Living (Including one Fitness and Wellness course)(2 credition)	<sup>ts)</sup> 2	Choose courses from the University-approved GEP course list for Physical Ed/Healthy Living.
Total credit hours needed to complete GEP that are <u>not</u> satisfied as part of the Major/College requirements.	24 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 a "USD" or "GK" indicator.
U.S. Diversity co-requisite (USI	D) n/a	Choose course from the University-approved GEP course list for U.S. Diversity.
Global Knowledge co-requisite (Gl	() n/a	Choose course from the University-approved GEP course list for Global Knowledge.
Foreign Language Proficiency	n/a	Proficiency at the FL_102 level required.

The following requirements must be satisfied within the College/Program:		Place an <b>X</b> requireme	in the credit hour box to indicate below that the nt is "Satisfied by College/Program Requirements"	
Communication in the Major (Advanced Communication)	Х	χ Satisfied by College/Program Requirements		
Technology Fluency	х	Satisfied by College/Program Requirements		
<b>Total credit hours required to complete Degree:</b> Total must be within 120-128 credit hours.	120 total hours			

#### Routing for DASA or Graduate School Approval of Other Degree Program Actions

Type of Action: Enter "X" for Action Type(s) and list Title and Prefix(s) as indicated

New Minor / Concentration	
Proposed Minor / Concentration Title	
Change in Minor / Concentration Title	
Current Minor / Concentration Title:	
Proposed Minor / Concentration Title:	
XChange in Curricular/Program Requirements	

Proposed Effective Date: \_\_\_May 2021\_\_\_ Program Contact: \_\_Dr. Dan Monek, Dpt Head\_\_\_\_\_ Proposed CIP Code (see <u>https://nces.ed.gov/ipeds/cipcode/default.aspx?y=55</u>):\_\_\_\_\_

Routing of Action: Indica	te date	when	the	following	occurs
Completed Proposal					

3/22/2021

Department Head endorses\*

- \_\_\_\_ College Curriculum Committee (undergraduate or graduate) recommends\*
- \_\_\_\_\_ College Dean endorses\*

### Proposal moves to Undergraduate or Graduate office for routing

\_\_\_\_\_ Recommended by Vice Provost, DELTA, if applies\*

- Associate Deans Council or Graduate Operations Council informed
- University Courses & Curriculum Committee **or** Administrative Board of the Graduate School recommends
  - \_\_\_\_ Dean (Graduate School or DASA) approves\*

\* Signature is required on the signature page for the action

# 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		
Jun	3/22/2021	
Head, Department/Program	Date	
Recommended By:		
Chair, College Curriculum Committee	Date	
Endorsed By:		
College Dean	Date	
Proposal moves to Undergraduate or Graduate offic Recommended By:	e for routing	
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		

# NORTH CAROLINA STATE UNIVERSITY UNDERGRADUATE CURRICULUM ACTION FORM Academic Minor

DEPARTMENT(S):			TYPE OF PROPOSAL:		
Music			New Minor:		
TITLE OF THE MINOR:			Revision to Minor:	_X	
Music Minor			Discontinuation:		
PROPOSED EFFECTIVE DATE:	May 2021	APPROVED EFF	ECTIVE DATE:		

- 1. Statement of Justification: The Department of Music is in the process of revising its minor program and can no longer guarantee the regular yearly offering of required courses needed to complete the Composition subplan. For students currently in the subplan, the department will continue to offer all required courses until those students have completed the minor. Advisors will encourage students interested in music composition to enroll in the General Studies subplan, where they can take courses that teach the principles of composition, including 153, 154, 305, 306, 270, 370. This proposal does not affect the status, requirements, or outcomes of the remaining subplans in Performance and General Studies. No other department will be affected by this proposal.
- 2. Statement of Academic Minor Program Objectives:
  - a. Knowledge of western and non-western music's cultural heritage, history, organization and structure,
  - b. Analytical skills necessary for identifying and listening to music from a variety of periods, styles and genres,
  - c. Ability to express ideas musically through vocal and instrumental performance.
- List of Courses constituting the Proposed Minor: Complete information on the present music minor, including courses, catalog description, administration, requirements for admission and completion can be found at <a href="https://oucc.dasa.ncsu.edu/music-24mum/">https://oucc.dasa.ncsu.edu/music-24mum/</a>

<u>REQUIRED SIGNATURES</u>:

Head, Department/Program

Chair, College Curriculum Committee

Date

3/22/2021

Date

Chair, College Curriculum Committee

OTHER REQUIRED SIGNATURES AS NEEDED:

College Dean

Date

College Dean

Date

Date

Chair, University Courses & Curricula Committee Date

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