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

Campus Box 7105
211A Park Shops
Raleigh, NC 27695-7105
P: 919.515.5627

University Courses & Curricula Committee 2015-2016

April 13th, 2016
Talley Student Union 4140
12:30pm-2:30pm

Call to Order 12:30pm

- Welcome and Instructions, Chair Dr. Scott Despain
- Remarks from Associate Vice Provost, Dr. Barbara Kirby
- Approval of UCCC March 30th, 2016 Minutes
- Course and Curricular Business

New Business

- Review of the Consent Agenda

Action	Type	Notes
16HISTTED *Teacher Education* 16HIM *History Minor*	Minor Revision	Add HI 254 to elective lists
16 PHILBA-- 16 PHILLAW *Philosophy of Law*		Replace "Philosophy and Law Electives" with "PHI 313", add 2 "Philosophy and Law Electives" to Senior Spring
16FSCM *Minor in Forensic Science*		Add CH 441 and MSE 480 to elective list
ACC 460 *Governmental & Nonprofit Accounting*		Renumber 410 to 460
MES 305 *Mechanical Engineering Systems Lab I*		Change grading method to Letter Grade
REL 472 *Women and Religion*		Make Dual Level with REL/WGS 572
COE 8 Semester Displays	Minor Revision	Update 8 Semester Displays to reflect approved course actions
ST 301 *Statistical Methods I*	Drop Course	Not Taught in 7 years, no plan to revive
ST 302 *Statistical Methods II*		

College of Agricultural & Life Sciences			
Presenter	**Reviewers**	**Action**	**Type**
Tarpy	Hessling, Black, Plummer	BIT 477 *Metagenomics*	New Course/ Dual Level 577
	Oliver-Hoyo, Hergeth,	BIT 478 *Mapping the Brain*	New Course/ Dual Level 578
	Beller, Lindsay, Fath	FS 435 *Food Safety Management Systems*	Revise Course: Multiple Revisions/ Dual Level 535
College of Engineering			
Presenter	**Reviewers**	**Action**	**Type**
Ferguson	Trivedi, Currie, Beller,	CSC 216 *Programming Concepts—JAVA*	Revise Course: Credit hours, catalog description
	Black, Plummer, Hergeth	MAE 426 *Fundamentals of Product Design*	New Course (Previously Special Topics)
University College			
Presenter	**Reviewers**	**Action**	**Type**
Outing	Auerbach, Hergeth, Lindsay	GSP 250 *Goodnight Scholars First Year Seminar*	New Course
	Hessling,Trivedi, Rieder	GSP 251 *Goodnight Scholars First Year Seminar*	New Course
Humanities & Social Sciences			
Presenter	**Reviewers**	**Action**	**Type**
Driscoll	Peretti, Black, Fath	PSY 200 *Introduction to Psychology*	Revise Course: Learning Outcomes
	Auerbach, Currie, Beller,	16SOCWB *Social Work B*	Revise Curriculum: 8 Semester Display
Poole College of Management			
Presenter	**Reviewers**	**Action**	**Type**
Nowel	Trivedi, Peretti, Oliver-Hoyo	ACC 420 *Cost Accounting for Effective Management*	Revise Course: Title, Abbreviated Title, Catalog Description

Notes:

- All linked course actions are viewable in CIM.
- To view actions, please click on the hyperlink. You may need to use your Unity ID to log in.

NC STATE UNIVERSITY

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

Campus Box 7105
211A Park Shops
Raleigh, NC 27695-7105
P: 919.515.5627

University Courses and Curricula Committee – March 30th, 2016

Talley Student Union 4140
Call to Order: 12:35 PM

Members Present: Chair, Scott Despain, Scott Ferguson, Rebecca Swanson, Peter Hessling, Kathleen Rieder, Steven Peretti, Jamie Plummer, Amanda Beller, Andy Nowel, Debbie Currie, Shweta Trivedi, Maria Oliver-Hoyo, Mian Helen Wu, and David Tarpy.
Ex-Officio Members Present:, Li Marcus, Sarah Howard, Barbara Kirby, and Charles Clift.
Guests: Jane Lubischer, David Parish, Gary Beckman, Tom Koch, and Thomas Easley.
Welcome and Introductions

- **Remarks from Chair Dr. Scott Despain—Welcome to the March 30th meeting, we have nearly every member here. Beth Fath is out ill. Today's agenda will not be followed in order, because of members involved in external reviews and guests who need to leave early. We will try to fix the agenda accordingly.**
- **Dr. Kirby—There are only few meetings left, so please pay attention to the final dates which items that need to go through CUE are due. Please encourage your colleges to send things along so that the catalog is ready for summer and fall. Please do your best. Thank you.**

- **Approval of UCCC March 16th, 2016 Minutes**
  - Approved unanimously, with a minor edit: "Approved Pending" should only be "Approved" for REL 423.

New Business:

- **Consent Agenda—Approved Unanimously**
  - **Discussion:** The consent agenda was presented and approved without further discussion.
- **Course and Curricular Business**
  - **AEC 441 Biology of Fishes -- Approved Unanimously**
    - **Discussion:** The course was presented and the reviewers agreed that it looked good. One member pointed out that the title used to be "Biology of Fish," but that was incorrect. An issue with the grade percentages adding up 125% was mentioned by a committee member. The OUCC will look into that. The course was approved without further discussion.
  - **ANS 260 Basic Swine Science – Approved Unanimously**
    - **Discussion:** The Chair mentioned that there was a question about the resources, but that has been answered. The course was approved without further discussion.
  - **ANS 271 Swine Nutrition – Approved Unanimously**
    - **Discussion:** One member confirmed that swine provide excellent nutrition. The course was approved without further discussion.
  - **FM 272 Swine Feed Mill Management – Approved Unanimously**
    - **Discussion:** The College of Animal and Life Science felt that the FM designation was best,

as most swine courses were not feed mill. One member asked if this course was restricted to non-Animal Science students. The course is part of the Ag Idea, and is taught online by an NCSU member at Kent State. This course would not count towards the 132 credits that would be required to graduate. One member mentioned that it still listed Animal Science pre-requisites. Committee members gave the very friendly suggestion to include what ANS students should take, instead of this course, in the catalog. This same information could also be put in the restrictive statement. The course was approved with small edits, as discussed.

- **11NTSBS Nutrition Science – Approved Unanimously**
    - **Discussion:** An undergraduate coordinator suggested that NTR 302 would help streamline the courses so that students could develop thinking skills and give them a sense of belonging to the College of Agricultural and Life Science community. The college edited the restricted nutrition elective, changed Biochemistry 351 to being no longer required, and added Physiology. The revised curriculum was approved without further discussion.
- **11NTSBS—11NTSAN Applied Nutrition – Approved Unanimously**
    - **Discussion:** The revised curriculum was presented and approved without further discussion.
- **ECE 466 Compiler Optimization and Scheduling – Approved Unanimously**
    - **Discussion:** Member mentioned that there was a typo (“tade-offs” instead of “trade-offs”) already caught in the CIM comments, and that the revision would be made. The course was approved without further discussion.
- **MES 300 Systems Engineering – Approved Unanimously**
    - **Discussion:** The course was presented and approved without further discussion.
- **MES 402 MES Capstone Design II – Approved Unanimously**
    - **Discussion:** The Chair mentioned a previous question about the component. David Parish explained that the course is not specifically a lecture, so it encompasses many components, which is why the College of Engineering put it under the category of lecture. A member had a question about the edits and visibility in CIM. Course was approved without further discussion.
- **MES 405 Mechanical Engineering Systems Lab II – Approved Unanimously**
    - **Discussion:** One member was curious why they changed part of course from “MES majors” to “MES students.” David Parish explained that the College of Engineering wanted to clean it up for improved reading. The course was approved without further discussion.
- **CNR 250 Diversity and Environmental Justice– Approved Unanimously**
    - **Discussion**: Members mentioned that the Student Learning Outcomes section of the course was unclear. Guest Thomas Easley explained what it meant more clearly, and members gave the friendly suggestion to replace the SLO with what he just said. A member also asked how globalization played into the course. Easley said it focused more throughout the U.S. Members brought up a question concerning the cited restrictions to CIM from the syllabus, but Li Marcus explained that it was not needed. The members had another question for Easley about the transportation. Easley confirmed that CNR has the buses to take students off-campus. Members thought that it was an ambitious course and commendable.
    - A separate question was brought before Dr. Kirby about the course counting for two separate GEP requirements, which she said would not be an issue for this course. The course was

approved without further discussion.

- **FOR 430 Forest Health & Protection – Approved Unanimously**
    - **Discussion:** The course was presented and approved without further discussion.
- **BSC 478 Research Fundamentals in Biological Sciences – Approved Unanimously**
    - **Discussion:** Members thought it was a very good and familiar course. The course was approved without further discussion.
- **BSC 492 Professional Experience – Approved Unanimously**
    - **Discussion:** Members wanted to know if the instructor of record would be Jane Lubischer, but the supervisor would be for the advisor or coordinator for their curriculum. Dr. Kirby agreed that, if a course is one-on-one, that needs to be fixed. Guest Jane Lubischer explained that there were two components: the contract with the advisor and the reflection questions in Moodle. These components keep the grading consistent. Overall, Lubischer is responsible. A member wondered if the course was required for students. Lubischer explained that some of the curricula require a learning experience of some sort. If it is in the curriculum, it would be limited to 6 hours. A member mentioned that it would be helpful if other departments could adopt a similar method, because it is excellent for the university transcript and for the students to get this sort of experience. Lubischer added that the reflection piece is what makes the experience relate to the students lives. The course was approved without further discussion.
- **BSC 493 Research Experience – Approved Unanimously**
    - **Discussion:** Lubischer mentioned that the course should show a 0 credit hour option in CIM, as it helps tracking. That way, students could have it on their transcript without the credit. Dr. Kirby said that would have to run by Upper Administration. It is problematic if faculty members start to post 0 credit courses. Lubischer explained that it is a way for the College of Sciences to track students who take the course, and that students to sign up for the credits in some cases. Charles Clift from Registrar agreed that there would need to be a sidebar, because courses with 0 credits need to be evaluated closely. Lubischer agreed that she was happy to move forward with the course as 1-3 credits. Dr. Kirby mentioned that this was being discussed in a couple of areas, but if a course is not generating credit for the degree and it is on the transcript, it would need to be justified for registrar. Lubischer said she could try to convince the students to sign up for 1 credit. The course was approved without further discussion.
- **BSC 494 Teaching Experience – Approved Unanimously**
    - **Discussion:** The Chair mentioned that there were elements of research in this course. Lubischer explained that the College of Sciences wanted to have research of their teaching experience in the course, though a number of the students would not be doing this. Teaching is not required, but the course does allow for it. A member wondered if there was a consult with Education. Lubischer said that she did send an email, but had not heard back. She added that the course is not teaching pedagogy, but offers an experience that relates to teaching. Members agreed that all three of these BSC courses are really great. The course was approved without further discussion.
- **CH 431 Physical Chemistry I – Approved Unanimously**

- **Discussion:** The course was presented and approved without further discussion.

- **CH 433 Physical Chemistry II – Approved Unanimously**
  - **Discussion:** The course was presented and approved without further discussion.
- **CH 437 Physical Chemistry for Engineers – Approved Unanimously**
  - **Discussion:** The course was presented and approved without further discussion.
- **MUS 120 Introduction to Music Theory – Approved Unanimously**
  - **Discussion:** The course was presented and approved without further discussion.
- **MUS 210 History of Rock I: 1950s-1970s – Approved Unanimously**
  - **Discussion:** Members saw one typo—"One one section expected." The course was approved without further discussion.
- **MUS 211 History of Rock II: 1980's- Present—Approved unanimously**
  - **Discussion**: Members thought it looked like a great course. The course was approved without further discussion.
- **MUS 240 Introduction to the Music Industry – Approved Unanimously**
  - **Discussion:** The course was presented and approved without further discussion.
- **MUS 270 Songwriting using Digital Audio Workstations – Approved Unanimously**
  - **Discussion:** Guest, Dr. Tom Koch, asked for a consultation, and while initial response was quick, response regarding specification of overlap took much more time. The Chair allowed that there are sometimes delays and thought it would be helpful to know Koch's take on the possibility of overlap. Koch agreed that there was some overlap, since both are music courses that use computers, but that the technology is used in different ways. MUS 270 uses technology for current, popular music composition, whereas MUS 306 uses the technology for more traditional techniques. Dr. Koch explained that MUS 270 teaches students to use software for rap, hip-hop, electronica, etc, and added that these are genres that students are clamoring for, and that Dr. Mullen has supported the development of the music technology area in the Department of Music. The members confirmed that the courses are different.
  - Members wanted to know how to approach situations like this in the future. Dr. Kirby said that consulting is a procedure. The policy adopted is that if members find two courses that are common, there should be discussion with faculty members to see if there is overlap, and if it becomes a formal consult, the Associate Deans facilitate that. The procedure is that the college has two weeks to respond and they get an email to remind them. They have another week to respond. The consultation is for the committee's information, but should have been sent before the meeting. If the body wants to say that they refuse to handle consults not sent with the agenda, that is UCCC's decision.
  - Members wondered if was possible for a student who took both courses to not receive credit for both. Koch thought not. And if MUS 306 wanted to implement the same technologies, it would require considerable change. The Chair said that he hears a consensus that the two are different courses. The course was approved without further discussion.
- **MUS 305 Music Composition – Approved Unanimously**
  - **Discussion:** There was a question concerning course fee, which was resolved. The course was approved without further discussion.
- **MUS 310 Music of the 17th and 18th Centuries – Approved Unanimously**

    - **Discussion:** Members complimented the instructor for providing examples of exemplary work for the students. The course was approved without further discussion.
- **GSP Prefix Memo – Approved Unanimously**
    - **Discussion:** Dr. Kirby explained that this course was for the Goodnight Scholars Program, and this prefix keeps their courses from getting lost in the inventory. They have two courses coming forward. The new course prefix was approved without further discussion.
- **PHI 309 Political Philosophy – Approved Unanimously**
    - **Discussion:** Member from the Humanities explained that the college wanted to add contemporary and historical philosophers to the course. The course was approved without further discussion.
- **REL 408/508 Islam in the Modern World – Approved Unanimously**
    - **Discussion:** One member asked if there was a consult for this course, but the Chair clarified that the action was only a clean-up. The dual-level is new, but the cross-listed dual level existed already. (HI/REL 408 and HI 408/508). Members can contact Melissa in the graduate school or Li Marcus with any questions about this process. The course was approved without further discussion.

Meeting Adjourned at: 2:20 PM

Respectfully Submitted by Sarah Howard

HSS # 5512

SIGNATURE PAGE

CURRICULA ACTION FOR 16HISTBA_16HISTTED; 16HIM

RECOMMENDED BY:

HEAD, DEPARTMENT/PROGRAM — DATE 2/10/16

ENDORSED BY:

CHAIR, COLLEGE COURSES & CURRICULA COMMITTEE — DATE 2/25/2016

COLLEGE DEAN — DATE 3/22/2016

APPROVED BY:

CHAIR, UNIVERSITY COURSES & CURRICULA COMMITTEE — DATE

CHAIR, COUNCIL ON UNDERGRADUATE EDUCATION — DATE

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

APPROVED EFFECTIVE DATE _____

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

College of Humanities and Social Sciences

HSS #5512

NC STATE UNIVERSITY

Department of History
Campus Box 8108
Raleigh, NC 27695-8108

919.515.2483
919.515.3886 (fax)

MEMORANDUM

TO: University Courses and Curricula Committee (UCCC)

FROM: David Zonderman, Interim Head, History

DATE: October 12, 2015

SUBJECT: HI 254 - Addition to History requirement

This memo requests a minor action change to include the newly approved course, HI 254 (Modern American History) as an elective course for the History BA-Teacher Education Concentration and for the History Minor.

History, 16HISTBA Subplan16HISTTED, SUM 2'09
American History Surveys
Requirement 000025488, 16LTH 2097 GRP150

History Minor, 16HIM
Group II Requirement
Requirement: 000031752

Effective: 8/2015

SIGNATURE PAGE

CURRICULA ACTION FOR 16PHILBA 16PHILLAW

RECOMMENDED BY:

HEAD, DEPARTMENT/PROGRAM — DATE 3/22/2016

ENDORSED BY:

CHAIR, COLLEGE COURSES & CURRICULA COMMITTEE — DATE 3/22/2016

COLLEGE DEAN — DATE 3/23/2016

APPROVED BY:

CHAIR, UNIVERSITY COURSES & CURRICULA COMMITTEE — DATE

CHAIR, COUNCIL ON UNDERGRADUATE EDUCATION — DATE

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

APPROVED EFFECTIVE DATE _____

HSS Log #5557

MEMORANDUM

TO: University Courses and Curricula Committee (UCCC)

FROM: Michael J. Pendlebury, Head, Philosophy & Religious Studies

DATE: February 29, 2016

SUBJECT: Minor Action to Correct 8-semester display for Philosophy BA, Concentration in Philosophy of Law (16PHILBA-16PHILLAW)

As the university has prepared to implement a new degree planning tool, it has come to our attention that the 8-semester display for our Philosophy BA, Concentration in Philosophy of Law currently recommends that students take a course – *PHI 313* – in a Spring semester when it is typically offered in the Fall semester. The purpose of this memo is to request a minor revision to the display to correct this error, as indicated in the attached 8-semester display where the needed changes are highlighted.

Philosophy (BA): Philosophy of Law (16PHILBA-16PHILLAW)

Semester Display Effective Date: 6.2014

FRESHMAN YEAR

Fall Semester	Credit	Spring Semester	Credit
ENG 101 Academic Writing and Research[H]	4	History II[1]	3
History I[1,C]	3	Social Science[2,D]	3
Social Science[2,D]	3	Mathematics[3,A]	3
Mathematics[3,A]	3	Natural Science[5,B]	3
Foreign Language 201[4,K]	3	HES_*** Health & Exercise Studies Course[E]	1
HES_*** Health & Exercise Studies Course[E]	1		**13**
	17		

SOPHOMORE YEAR

Fall Semester	Credit	Spring Semester	Credit
Literature[6]	3	Literature[6]	3
Social Science[2]	3	Social Science[2]	3
Natural Science[5, B]	4	Logic (LOG 201, 335, 435, 437, PHI 250)[9]	3
Value Theory[7]	3	Free Elective[8]	3
Free Elective[8]	3	GEP Additional Breadth Requirement[F] (MS/NS/E)	3
	16		**15**

JUNIOR YEAR

Fall Semester	Credit	Spring Semester	Credit
History of Philosophy[10]	3	Contemporary Philosophy[13]	3
PHI 309	3	PHI 496 Writing in Contemporary Philosophy[11]	1
PHI 495 Writing in History of Philosophy[11]	1	GEP Interdisciplinary Perspectives Requirement[G]	2-3
Arts and Letters Elective[12]	3	PHI 312 [C]	3
Free Elective[8]	3	Free Electives[8]	6
	13		**15-16**

SENIOR YEAR

Fall Semester	Credit	Spring Semester	Credit
~~Philosophy and Law Electives~~[14] PHI 313	3	Philosophy and Law Electives[14]	~~3~~ 6
PHI 494 Writing in Ethics[11]	1	~~PHI 313~~	~~3~~
GEP Interdisciplinary Perspectives Requirement[G]	3	Free Electives[8]	9
Free Electives[8]	9		**15**

Minimum Credit Hours Required for Graduation*[I,J,K,15,16,17] :	120

Major/Program Footnotes:

1History. Six hours. 3 hours from GRP 501 History I (AFS 275 or 276, HI 207, 215, 216, 232, 233, 263, 264, 270, 275, or 276); 3 hours from GRP 502 History II (HI 205, 208, 209, 210, 221, 222, 251, or 252).

2 Social Science. Twelve hours. Four 3-credit courses from three different areas among the following: ANT, ARE, EC, PS, PSY, SOC. Also ENG 210, GEO 220, IDS 401, or STS 402. 6 credit hours must be chosen from the GEP Social Sciences list.

3 Mathematics. Six hours chosen from the GEP mathematics list. Credit is not given for more than one MA 121, 131, or 141. Students will not be given credit for MA 111 if they have taken MA 107 or MA 108.

4 Foreign Language Proficiency. Three hours. GRP 509 Foreign Language 201 (FLA 201, FLC 201, FLF 201, FLG 201, FLH 201, FLI 201, FLJ 201, FLN 201, FLP 201, FLR 201, FLS 201, GRK 201, LAT 201, or PER 201). All CHASS B.A. degree programs require study of one foreign language through at least the first semester of the intermediate level (201-level course). For placement information, high school students should take the SAT II – Foreign Language Test in the foreign language they have studied in high school. Alternatively, students may take the Advanced Placement (AP) Foreign Language or Literature exam, the International Baccalaureate (IB) Foreign Language or Classical Language exam (Higher Level), or the NC State Foreign Language Placement Test for foreign language placement. The NC State Foreign Language Placement Test is offered in French, German, Latin and Spanish. Opportunity to take it is provided during New Student Orientation and at other times. Students may take the NC State Foreign Language Placement Test only one time in a given language. Students who wish to complete the CHASS foreign language requirement in a language different from the language of their high school foreign language proficiency are not required to take a foreign language placement test. Native speakers of languages other than English do not receive credit for lower division (100- and 200-level) courses in their native language. For these students, a 201-level foreign language course is not a graduation requirement; their foreign language requirement is replaced by a 3-credit free elective. Students must enroll in foreign language at the level at which they are placed. Students who take a 101-level course in the language of their high school foreign language proficiency will not receive graduation credit for the course. 102- and 110-level language courses may count as free electives in all CHASS curricula. Students who place into a 202-level or higher language course will have met the CHASS foreign language requirement and are eligible to receive three hours of advanced placement credit by enrolling in the course into which they are placed and earning a grade of C- or better on the first attempt.

5 Natural Science. Seven hours from the GEP Natural Science list, one with a lab.

6 Literature. Six hours. 3 hours from GRP 503 Literature I. A survey course covering literature outside the U.S. and prior to the 20th century: ENG 219, 220, 221, or 222; ENG 251, 261, or 262; FL 219, 220, 221 or 222; FLF 301; 340, 341, 342, 351, 352; FLG 300, 316; or FLR 303, FLS 340, HON 202, 293. For English, French and Spanish majors, departmental core requirements satisfy this requirement. Credit is not allowed for both ENG 251 and either of ENG 261 or ENG 262. Honors (HON) courses may satisfy the Literature I requirement if more than half of the literature covered is outside the U.S. and prior to the twentieth century. 3 hours from GRP 504 Literature II. Literature Elective at the 200 level or above: AFS 248; ENG 207, 208, 209, 219, 220, 221, 222, 223, 224, 232, 233, 246, 248, 249, 251, 252, 261, 262, 265, 266, 305, 349*, 351*, 362, 363, 369, 370, 371, 372, 373, 376, 377, 380, 382, 383, 385, 390, 392, 393, 394, 398, 399, 406,407, 420, 439, 448, 449, 451, 452, 453, 460, 462, 463, 464, 465, 468, 469, 470, 471, 476, 486, 487; FL 219, 220, 221, 222, 223, 224, 246, 392, 393, 394, 406, 407; FLF 301, 302, 340, 341, 342, 351, 352, 414, 492; FLG 300, 316, 323; FLN 301, 302, 401; FLR 303, 304; FLS 300, 302, 304, 323, 341, 342, 343, 351, 352, 353, 403, 404, 492; GRK 320; HON 202, 293. [*An asterisked course may satisfy group requirements only when its content is appropriate to that requirement.]

7 Value Theory. Three hours. One course from Group 434 (PHI 375, PHI 376, PHI 475); satisfies CHASS PHI requirement.

8 No more than 12 credit hours of free electives may be taken for Credit Only (S/U).

9 Logic. Three hours. One course from Group 709 (LOG 201, 335, 435, 437, PHI 250).

10 History of Philosophy. Three hours. One course from Group 713 (PHI 300, PHI 301, PHI 302, PHI 401).

11Writing in Philosophy: Three hours. All of PHI 494, PHI 495, and PHI 496.

12 Arts and Letters Elective. Three hours. One course from the following list: All HA courses, MUS 180, 200, 201, 202, 205, 206, 230, 260, 306, 310, 315, 320, 330,335, 350, 360, all 200 and above REL courses, ADN 111, 112, 202, 212, 219, 231, 272, 273, 281, 311, 384, 386, 414, or 454, AFS 340 or 375, ARC 140, 141, or 142, ARS 251, 259, 306, 351, or 353, COM 103, 203, 213, 233, 243, 303, 321, 323, 333, 340, 364, 374, or 411, DAN 272, or 295, ENG 282, 283, 321, 364, 374, 411, or 492, FL 216, FLF 318, FLG 318, FLS 318, GD 200 or 342, GRK 310, IDS 496, LAR 444, LAT 310.

13 Contemporary Philosophy. Three hours. One course from Group 715 (PHI 330, 331, 332, 333, 425, 440, 447).

14 Philosophy and Law Electives. Six hours. Two courses from Group 429 (ARE 301, EC 201, EC 205, EC 301, ENG 363, ENG 463, HI 221, HI 443, PHI 205, PHI 214, PHI 221, PHI/STS 325, PS 306, PS 307, PS 308, PS 431, PS 445, PS 506, PS 507, WGS 306). At least one of the courses taken to satisfy this or other major requirements must be a 3 credit hour 400-level PHI or LOG course (other than PHI 498 and LOG 498). (The Comprehensive Articulation Agreement provides for automatic satisfaction of GEP requirements by designated transfer students under specified conditions. Although a course may serve the latter purpose, it may not thereby also satisfy college or major requirements unless it has already been designated as an equivalent. For a list of transfer equivalents, see http://admissions.ncsu.edu/how-apply/admission-profile/course-equiv.php).

15 The Department of Philosophy and Religion does not accept D grades (D-, D, D+) in courses taken to satisfy any major requirements or in ENG 101 taken to satisfy the Introduction to Writing GEP requirement.
16 A major GPA of at least 2.0 is required for graduation.
17 If a student takes a course that double counts in fulfilling more than one requirement, the student will need to take a free elective course(s) to meet the total of 120 credit hours for graduation.

***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.dasa.ncsu.edu/general-education-program/.

A. Mathematical Sciences (6 credit hours – one course with MA or ST prefix)
The following completed as part of the Major requirements may fulfill this requirement: ***Mathematics requirement (see footnote 3)***
B. Natural Sciences (7 credit hours – include one laboratory course or course with a lab)
Choose from the University approved GEP Natural Sciences course list.
C. Humanities (6 credit hours selected from two different disciplines/course prefixes)
The following course(s) completed as part of the Major requirements may fulfill this requirement: ***History Group I: AFS 275 or 276, HI 207, 215, 216, 233, 263, 264, 270, 275, or 276; and PHI 312***
D. Social Sciences (6 credit hours selected from two different disciplines/course prefixes)
The following completed as part of the Major requirements may fulfill this requirement: ***Social Science major requirement (see footnote 2).***
E. Health & Exercise Studies (2 credit hours – at least one 100-level Health & Exercise Studies Course)
Choose from the University approved GEP Health & Exercise Studies course list.
F. Additional Breadth - (3 credit hours to be selected from the following checked University approved GEP course lists)
X Mathematical Sciences/Natural Sciences/Engineering (***excluding LOG courses***)
G. Interdisciplinary Perspectives (5-6 credit hours)
Choose from the University approved GEP Interdisciplinary Perspectives course list.
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:
I. U.S. Diversity (USD)
Choose from the University approved GEP U.S. Diversity course list or choose a course identified on the approved GEP course lists as meeting the U.S. Diversity (USD) co-requisite. The following course(s) completed as part of the Major requirements may fulfill this requirement: ***PHI 415, PHI 422.***
J. Global Knowledge (GK)
Choose from the University approved GEP Global Knowledge course list or choose a course identified on the approved GEP course lists as meeting the Global Knowledge (GK) co-requisite. ***Check courses in History groups, Literature groups and Phil & Law elective group***
K. Foreign Language proficiency - Proficiency at the FL_102 level is required for graduation.

HSS a 5545

SIGNATURE PAGE

MINOR ACTION FOR Minor in Forensic Science

RECOMMENDED BY:

BLAIR KELLEY, ASSISTANT DEAN FOR INTERDISCIPLINARY STUDIES — DATE 2.8.16

ENDORSED BY:

CHAIR, CHASS COURSES & CURRICULA COMMITTEE — DATE 3/14/16

CHASS DEAN — DATE 3/22/16

APPROVED BY:

CHAIR, UNIVERSITY COURSES & CURRICULA COMMITTEE — DATE

CHAIR, COUNCIL ON UNDERGRADUATE EDUCATION — DATE

DEAN OF UNDERGRADUATE ACADEMIC PROGRAMS — DATE

APPROVED EFFECTIVE DATE

Consultations

Gregory Neyhart <gneyhart@ncsu.edu> *7/9/15*

[redacted] Maria

HSS Log #5545

MEMORANDUM

To: Dean of Undergraduate Academic Programs DATE: January 29, 2016

From: BLAIR KELLEY, ASSISTANT DEAN FOR INTERDISCIPLINARY STUDIES

Subject: Revision of Minor in Forensic Science (16FSCM)

The courses **CH 441 Forensic Chemistry and MSE 480 Materials Forensics and Degradation,** which cover material central to Forensic Science, should have been added to the Elective courses list for the Minor in Forensic Science when the courses were first approved. However, we recently received Departmental approval for inclusion.

Current	Proposed
Required Courses (3 credit hours) ANT370 Introduction to Forensic Anthropology	(no change)
Elective Courses (12 credit hours) ENT 305 Introduction to Forensic Entomology ET 470 Environmental Forensics (3 cr.) MEA 433 Forensic Geology (4 cr.) TOX 201 Poisons, People and the Environment (3 cr.) PHI (STS) 325 Biomedical Ethics (3 cr.) PS 205 Law and Justice (3 cr.) PS 307 Introduction to Criminal Law in the United States (3 cr.) SOC 306 Criminology (3 cr.) PCC 274 Introduction to Forensic Science (3 cr.) PCC 474 Forensic Chemistry Laboratory (3 cr.) PS 307 Introduction to Criminal Law in the United States (3 cr.) PS 313 Criminal Justice Policy (3 cr.) PH 420 Global Justice (3 cr.)	**Elective Courses (12 credit hours)** CH 441 Forensic Chemistry (3 cr.) MSE 480 Materials Forensics and Degradation (3 cr.) PCC 274 Introduction to Forensic Science (3 cr.) PCC 474 Forensic Chemistry Laboratory (3 cr.) ENT 305 Introduction to Forensic Entomology PS 307 Introduction to Criminal Law in the United States (3 cr.) PS 313 Criminal Justice Policy (3 cr.) PH 420 Global Justice (3 cr.) ET 470 Environmental Forensics (3 cr.) MEA 433 Forensic Geology (4 cr.) TOX 201 Poisons, People and the Environment (3 cr.) PHI (STS) 325 Biomedical Ethics (3 cr.) PS 205 Law and Justice (3 cr.) PS 307 Introduction to Criminal Law in the United States (3 cr.) SOC 306 Criminology (3 cr.)

Thank you.

Consultations

Gregory Neyhart <gneyhart@ncsu.edu> *7/9/15*

to Maria, Jeremiah, me, Jo-Ann

Ann,

The chemistry department has no objection to CH 441, Forensic Chemistry, being included as an elective for the Forensics minor.

Since this course is also a "Chemistry Advanced Elective" for both the BS and BA Chemistry major, we may at some point in the future need to reserve some fraction of seats for our majors. That decision would be made in the future should the population of the course change significantly.

Greg Neyhart
Co-Director of the Undergraduate Program
Department of Chemistry

Carl Koch <cckoch@ncsu.edu> *Jan 30 (3 days ago)*

to me

Yes

Sent from my iPad

On Jan 29, 2016, at 5:15 PM, Ann Ross <ahross@ncsu.edu> wrote:

Dear Carl,
I would like to included your course MSE 480 Materials Forensics and Degradation as an elective for the forensic science minor. Would you be okay with this?

Thank you,
Ann

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

Office of Undergraduate Programs

NC STATE UNIVERSITY

Poole College of Management
Campus Box 8614
Raleigh, NC 27695-8614

919.515.5565 (phone)
919.515.5564 (fax)

MEMO

Date: March 17, 2016

To: Dr. Barbara Kirby, Associate Vice Provost, Academic Programs & Services

From: Dr. Frank Buckless, Accounting Department Head

Subject: Renumber ACC 410 to ACC 460

We propose renumbering ACC 410, *Governmental and Nonprofit Accounting*, to ACC 460. ACC 410 is not a pure financial accounting course as are other courses at the ACC 41X-level. It includes topics in financial reporting, budgeting and auditing. Renumbering to ACC 460 would allow us to create separate practicum courses and effectively identify them as financial accounting (ACC 419), managerial accounting (ACC 429), information systems (ACC 449), internal auditing (ACC 459) and governmental and nonprofit accounting (ACC 469).

PROPOSED EFFECTIVE: SPRING 2017

RECOMMENDED BY:

3-23-16

HEAD, DEPARTMENT/PROGRAM — DATE

ENDORSED BY:

3/23/16

CHAIR, COLLEGE COURSES & CURRICULA COMMITTEE — DATE

3/24/16

COLLEGE DEAN — DATE

APPROVED BY:

CHAIR, UNIVERSITY COURSES & CURRICULA COMMITTEE — DATE

CHAIR, COUNCIL ON UNDERGRADUATE EDUCATION — DATE

DEAN OF UNDERGRADUATE ACADEMIC PROGRAMS — DATE

Course Syllabus

MES 305 – Mechanical Engineering Systems Lab I

Section 605

Offered in Spring

1 Credit Hour

Course Description

Course provides an introduction to the theory and practice of manual and computer assisted laboratory measurement techniques, data analysis, design of experiments and technical report writing. Students learn to successfully conduct and document an engineering experiment.

Learning Outcomes

By the end of this course, students should be able to:

1. Properly use mechanical and electronic measuring devices to quantify properties such as dimensional characteristics, flow, temperature, strain, voltage and current;
2. Utilize computer tools to perform automated data acquisition;
3. Use statistical techniques to analyze the consistency and reliability of experimental data;
4. Properly identify sources of experimental error and create plans to reduce variation;
5. Perform a materials properties analysis on traditional and composite materials;
6. Create and execute a plan to lead a team of peers in performing a pre-designed laboratory experiment;
7. Create a professional engineering lab journal;
8. Present experimental results and methods in various industry supported formats.

Course Structure

This course is composed of four main components – pre-laboratory assignments, laboratory time, post-laboratory assignments and the group project.

Pre-Laboratory Quiz and/and or Assignment (approximately 45 minutes per week)

Before each laboratory session, material will be posted on the course website to help review the theory required to be successful in the laboratory exercise. The assigned pre-lab work must be completed before conducting the laboratory exercise. Pre-Lab material will be turned in at the start of lab and students not completing the pre-laboratory assignment will not be allowed to conduct the laboratory experiment and will receive a grade of zero on the laboratory post-lab assignment.

Laboratory Time (3 hours per week)

During the laboratory time, experiments will be conducted which are designed to allow students to explore the theory studied in the pre-laboratory material. Students will be required to keep notes during each lab in a **laboratory journal**. Proper journaling techniques will be taught during the first laboratory session.

Post-Laboratory Assignment (2 hours per week)

After each laboratory experiment, an assignment will be given to reinforce the work done. Some of these assignments will be formal laboratory reports. Post-lab material is due at the beginning of the lab indicated. Ten points will be deducted for each day late.

Most lab exercises will also have an **Application Question**. This question will require you to apply concepts explored in lab by making a decision and being ready to defend it. You will not turn in anything for the application question, but at the beginning of the lab period in which the post-laboratory assignment is due, students will be randomly selected to give and defend their decision. Performance in the Applications Question will be counted in the lab journal / attendance grade.

Group Project (Equivalent of 2 Laboratory Experiments)

Students will be grouped into design teams and given a team project to plan, execute, write up, and present an experiment of their choice using any of the lab equipment from the semester. The project gives a chance to explore something that students are interested in and gives practice at developing an experiment. The projects counts as two laboratory exercises and a full formal report and presentation are due as the final exam during the scheduled final exam time for the course.

Instructors

Bill Fortney – *Instructor* **Jim Yankauskas**
Email: wbfortne@ncsu.edu jjyankau@ncsu.edu
Phone: 252-514-5956
Office Location: Redd Room 106 - NCSU At Havelock
Office Hours:

Course Meetings

Lab

Days: Monday
Time: 9:30am - 12:30pm
Campus: Havelock
Location: Redd Room 107 - NCSU At Havelock
This meeting is required.

Course Materials

Textbooks – provided for reference

Introduction to Engineering - *Wheeler, Anthony and Ganji Ahmad*
Edition: 3nd
ISBN:
Cost: $100 New $50 Used

Basic Experiments in PID Control For Engineers - *Silverberg, Larry and Tran, Chau*
Edition: 1st
ISBN:
Cost: $30 New

Expenses

None.

Materials

Students must purchase a 3-ring notebook to be used as a laboratory journal.

Requisites and Restrictions

Prerequisites

MSE 201, MAE 206

Co-requisites

None.

Restrictions

Course is for MES Majors only

General Education Program (GEP) Information

GEP Category

This course does not fulfill a General Education Program category.

GEP Co-requisites

This course does not fulfill a General Education Program co-requisite.

Transportation

Students will be required to provide their own transportation for this class. Non-scheduled class time for field trips or out-of-class activities is NOT required for this class.

Safety & Risk Assumptions

Lab safety is everyone's responsibility and no one should work with a piece of laboratory equipment on which they are unfamiliar. Lab instructors will show students the location of safety equipment in the laboratory and discuss any required precautions necessary for conducting each experiment. This lab is equipped with a Safety Plan Manual. This manual is a resource for personnel working in a laboratory to know what hazards are present. This manual will be pointed out to the student during the first lab and it is the student's responsibility to read the Safety Plan Manual and understand the safety hazards in the lab.

Grading

Grade Components

Component	Weight	Details
Pre-Lab Quizzes & Assignments	**20%**	Before each laboratory session, material will be posted on the course website to help review the theory required to be successful in the laboratory exercise. The assigned pre-lab work must be completed before conducting the laboratory exercise. Pre-Lab material will be turned in at the start of lab and students not completing the pre-laboratory assignment **will not be allowed to conduct the laboratory** experiment and **will receive a grade of zero** on the laboratory post-lab assignment.
Lab Journal/Attendance	**10%**	Each student will be required to purchase a 3-ring notebook to use as a laboratory journal. Guidelines for keeping a laboratory journal will be passed out in class. Performance in the Applications Question will be counted in the lab journal / attendance grade.
Post-Lab Assignments	**70%**	After each laboratory experiment, students will complete a written assignment. These assignments will help the students process through and analyze the laboratory experience and allow them to practice various forms of technical documentation.

Letter Grades

This Course uses Standard NCSU Letter Grading:

97 ≤ **A+** ≤ 100
93 ≤ **A** < 97
90 ≤ **A-** < 93
87 ≤ **B+** < 90
83 ≤ **B** < 87
80 ≤ **B-** < 83
77 ≤ **C+** < 80
73 ≤ **C** < 77
70 ≤ **C-** < 73
67 ≤ **D+** < 70
63 ≤ **D** < 67
60 ≤ **D-** < 63
0 ≤ **F** < 60

Requirements for Credit-Only (S/U) Grading

In order to receive a grade of S, students are required to take all exams and quizzes, complete all assignments, and earn a grade of C- or better. Conversion from letter grading to credit only (S/U) grading is subject to university deadlines. Refer to the Registration and Records calendar for deadlines related to grading. For more details refer to http://www.ncsu.edu/policies/academic_affairs/courses_undergrad/REG02.20.15.php.

Requirements for Auditors (AU)

Information about and requirements for auditing a course can be found at http://www.ncsu.edu/policies/academic_affairs/pols_regs/REG205.00.5.php.

Policies on Incomplete Grades

If an extended deadline is not authorized by the instructor or department, an unfinished incomplete grade will automatically change to an F after either (a) the end of the next regular semester in which the student is enrolled (not including summer sessions), or (b) the end of 12 months if the student is not enrolled, whichever is shorter. Incompletes that change to F will count as an attempted course on transcripts. The burden of fulfilling an incomplete grade is the responsibility of the student. The university policy on incomplete grades is located at http://www.ncsu.edu/policies/academic_affairs/grades_undergrad/REG02.50.3.php.

Late Assignments

Post-Laboratory assignments are due at the beginning of class on the due date. Ten points will be deducted from the assignment's grade for each day late.

Attendance Policy

Attendance

Students are expected to attend all class sessions and arrive to class on-time.

Absences

Students who miss class due to an unexcused absence will not be allowed to make up any work completed during the class period and any work due will be considered late. Students who miss a lab due to an excused absence should work with their instructor to make up required work. Documented excuses should be presented to the instructor by the next lab meeting. Examples of anticipated qualified excused absences are:

- The student is away from campus on official University business, e.g., participating in a professional meeting, as part of a design team or athletic team.
- Required court attendance as certified by the Clerk of Court.
- Religious observances as verified by Parents and Constituent Services (515-2441). For more information regarding religious observances, visit the Diversity calendar.
- Required military duty as certified by the student's commanding officer.

For a full statement on the University attendance policy, see http://www.ncsu.edu/policies/academic_affairs/courses_undergrad/REG02.20.3.php

Makeup Work

Students with a documented excused absence as described above will be given one week to turn in any missed work. After this week, the assignment will be considered late as described in the late assignment policy.

Additional Excuses Policy

None.

Academic Integrity

Academic Integrity

Students are required to comply with the university policy on academic integrity found in the Code of Student Conduct found at http://www.ncsu.edu/policies/student_services/student_discipline/POL11.35.1.php

Academic Honesty

See http://www.ncsu.edu/policies/student_services/student_discipline/POL11.35.1.php for a detailed explanation of academic honesty.

Honor Pledge

Your signature on any test or assignment indicates "I have neither given nor received unauthorized aid on this test or assignment."

Electronically-Hosted Course Components

Students may be required to disclose personally identifiable information to other students in the course, via electronic tools like email or web-postings, where relevant to the course. Examples include online discussions of class topics, and posting of student coursework. All students are expected to respect the privacy of each other by not sharing or using such information outside the course.

Electronically-hosted Components: All course material will be delivered to you using the course Moodle site.

Accommodations for Disabilities

Reasonable accommodations will be made for students with verifiable disabilities. In order to take advantage of available accommodations, student must register with the Disability Services Office (http://www.ncsu.edu/dso) located at 1900 Student Health Center, Campus Box 7509, 515-7653. For more information on NC State's policy on working with students with disabilities, please see the Academic Accommodations for Students with Disabilities Regulation at http://www.ncsu.edu/policies/academic_affairs/courses_undergrad/REG02.20.1.php.

Non-Discrimination Policy

NC State University provides equality of opportunity in education and employment for all students and employees. Accordingly, NC State affirms its commitment to maintain a work environment for all employees and an academic environment for all students that is free from all forms of discrimination. Discrimination based on race, color, religion, creed, sex, national origin, age, disability, veteran status, or sexual orientation is a violation of state and federal law and/or NC State University policy and will not be tolerated. Harassment of any person (either in the form of quid pro quo or creation of a hostile environment) based on race, color, religion, creed, sex, national origin, age, disability, veteran status, or sexual orientation also is a violation of state and federal law and/or NC State University policy and will not be tolerated. Retaliation against any person who complains about discrimination is also prohibited. NC State's policies and regulations covering discrimination, harassment, and retaliation may be accessed at http://www.ncsu.edu/policies/campus_environ or http://www.ncsu.edu/equal_op. Any person who feels that he or she has been the subject of prohibited discrimination, harassment, or retaliation should contact the Office for Equal Opportunity (OEO) at 515-3148.

Course Schedule

MES 305 SPRING 2016 (1/5/16)

	Group 2		Lab	Deliverable	Due
	11-Jan	1	Analysis	Beam Data Analysis Initial Lab View #1	2 2
	18-Jan		No Class		
	25-Jan	2	Lab View & Analysis & Report Writing	Beam A/R/D/C	3
	1-Feb	3	Lab View / Elec Measurements	Peer Review of Beam Writeup Lab View #2	4 7
	8-Feb	4	Materials Tensile/Hardness Test	Individual Full	7
	15-Feb	5	Lab View / Mechanical Measurements	Create Engineering Drawing	8
	22-Feb	6	DOE / Semester Project	Initial DOE	10
	29-Feb	7	Basic Flow Measurement	A/R/D/C Lab View #3	9 11
	7-Mar		No Class		
	14-Mar	8	Lab view / Bridge Circuits	Homework Problems	9
	21-Mar	9	Cantilever Beam Bending	A/R/D/C	11
	28-Mar	10	Thermocouples	Paper - Reliability of Internal	11
	4-Apr	11	Thermocouple Transient Response	Group Full	13
	11-Apr	12	Pressure Vessel & Mohrs Circle-A	Homework Problems	13
	18-Apr	13	Pressure Vessel & Mohrs Circle-B	Paper - Calculations/conclusion	14
	25-Apr	14	Torsion	Homework Problems	15
5/2 8:00-11:00		15	Final / Project Pres		

REL/WGS 472/572
WOMEN AND RELIGION

Dr. Mary Kathleen Cunningham
Withers 347, 919-515-6105
mk_cunningham@ncsu.edu
Office Hours: M/W 3-4 p.m., F 12:30-1:30 p.m., or by appointment
Class Time: M/W, 1:30-2:45 p.m.
Class Location: Withers 105

Course Description

This course examines historical, literary, and theological sources dealing with gender and portrayals of women and women's religious experience in Judaism, Christianity, and Islam through different historical periods, from ancient to modern. After considering the impact of feminist theory on the academic study of religion and addressing the methodological issues surrounding the study of women's religious history, the course will be organized around the themes of reclaiming women's history, rereading classical religious texts, and naming the sacred. (3 credit hours)

Catalog Description: Historical, literary, and theological sources dealing with portrayals of women and women's religious experience in several religious traditions of the world through different historical periods, from ancient to modern. Impact of feminist theory on the academic study of religion; methodological issues surrounding the study of women's religious history; role of religion in shaping attitudes toward women and their status in society.

REL/WGS 472 Course Prerequisite: One course in Religious Studies or Women's and Gender Studies.
REL/WGS 472 Enrollment Restrictions: Sophomores, Juniors, and Seniors.
GEP Designation: Humanities (http://oucc.ncsu.edu/gep-humanities). **If you are taking this course to meet a GEP requirement*, do not take it as Credit Only (S/U)*.**

REL/WGS 572 Course Prerequisite: None
REL/WGS 572 Enrollment Restrictions: Graduate Standing

GEP Humanities Objectives and Learning Outcomes

GEP Objective 1: Engage the human experience through the interpretation of human culture.

Student Learning Outcome: By the end of the course, students will be able to analyze historical, literary, and theological sources dealing with gender and portrayals of women and women's religious experience in Judaism, Christianity, and Islam through different historical periods, from ancient to modern.

Assessment: Short writing assignments and examination questions. (*Ex.* Discuss the textual evidence provided by Meyers for her assertion that the linking of Eve with sin and suffering in traditional interpretations of Genesis 3 is a distortion that obliterates other important features of the story and summarize her methodology and argument concerning Genesis 3:16.)

Student Learning Outcome: By the end of the course, students will be able to describe and interpret the role that religion has played and continues to play in shaping attitudes toward women and their status in society.

Assessment: Short writing assignments and examination questions. (*Ex.* Discuss Ahmed's contention that there exist within Islam two distinct voices and two competing understandings of gender, one expressed in the pragmatic regulations for society, the other in the articulation of an ethical vision. In your answer, examine her treatment of the development of core Islamic discourses on women and gender in light of the historical contexts that helped shape these discourses and her view that this history is one of gradual deterioration in the status and rights of women. What suggestions does she offer for achieving a reading of Islam that she feels is fairer to women?)

GEP Objective 2: Become aware of the act of interpretation itself as a critical form of knowing in the humanities.

Student Learning Outcome: By the end of the course, students will be able to describe the impact of feminist theory on the academic study of religion and the methodological issues surrounding the study of women's religious history.

Assessment: Short writing assignments and examination questions. [*Ex.* Describe and evaluate Trible's methodology and interpretation of two of the texts of terror that she examines. Be sure to address the issue of the relationship that she sees among writer, text, and reader as well as her commitment to the methodology of literary criticism and the perspective of feminism. How successful is her proposal as both a piece of feminist scholarship dedicated to studying women thoroughly and completely and as biblical interpretation (coherent/consistent, comprehensible, illuminating for our time)? Give reasons for your assessment.]

Student Learning Outcome: By the end of the course, students will be able to analyze and apply diverse methods of interpreting classical religious texts.

Assessment: Short writing assignments and examination questions. (*Ex.* Compare and contrast the Pauline pronouncements on sexuality and gender in I Corinthians 7, 11, and 14 with the views in Colossians 3, Ephesians 5, I Timothy 2 and 5, and I Peter 2-3. Discuss how the commentators in *Women's Bible Commentary* and *Women and Christian Origins* interpret the similarities and/or differences in these letters.)

GEP Objective 3: Make academic arguments about the human experience using reasons and evidence for supporting those reasons that are appropriate to the humanities.

Student Learning Outcome: By the end of the course, students will be able to analyze and evaluate diversified religious proposals.

Assessment: Short writing assignments and examination questions. (*Ex.* Discuss McFague's proposal for experimenting with the model of God as mother. Why does she feel that we should use female as well as male metaphors of God? What does she mean by saying that God should be imagined in female, not feminine, terms? Briefly describe how McFague characterizes the love, activity, and ethic of God as mother. What does this kind of love say about existence in our world? What are the strengths and weaknesses of McFague's proposal? Do you agree with her that this model is an "illuminating expression of an inclusive Christian vision of fulfillment appropriate to a holistic, nuclear age?" Why or why not?)

REL/WGS 572 Student Learning Outcomes: By the end of the course, students will be able to

1. analyze historical, literary, and theological sources dealing with gender and portrayals of women and women's religious experience in Judaism, Christianity, and Islam through different historical periods, from ancient to modern.
2. describe and interpret the role that religion has played and continues to play in shaping attitudes toward women and their status in society.
3. describe the impact of feminist theory on the academic study of religion and the methodological issues surrounding the study of women's religious history.
4. analyze and apply diverse methods of interpreting classical religious texts.
5. analyze and evaluate diversified religious proposals.

Required Texts

Available from the Campus Bookstore and on reserve in the library:

Ahmed, Leila. *Women and Gender in Islam: Historical Roots of a Modern Debate*. New Haven: Yale University Press, 1992. ($23.00, new)
Trible, Phillis. *Texts of Terror: Literary-Feminist Readings of Biblical Narratives*. Philadelphia: Fortress Press, 1984. ($20.00, new)
Wadud, Amina. *Qur'an and Woman: Rereading the Sacred Text from a Woman's Perspective*. New York: Oxford University Press, 1999. ($19.99, new)

Articles and Selected Readings on library electronic reserve (ER--see syllabus for specific listings): https://reserves.lib.ncsu.edu/

Kraemer, Ross Shepard and Mary Rose D'Angelo, eds. *Women & Christian Origins*. NewYork: Oxford University Press, 1999.
Meyers, Carol. *Rediscovering Eve: Ancient Israelite Women in Context*. New York: Oxford University Press, 2013.
Wadud, Amina. *Qur'an and Woman: Rereading the Sacred Text from a Woman's Perspective*. New York: Oxford University Press, 1999.

D.H. Hill Textbook Collection (Circulation Desk):

The HarperCollins Study Bible: New Revised Standard Version with the Apocryphal/Deuterocanonical Books (BS 191.5 .A1 2006 .S26)
The Qur'an: A New Translation, by M.A.S. Abdel Haleem (BP109 .H3 2008)

The NRSV Bible is available on the web: http://www.bible.oremus.org

Several translations of the Qur'an are available on the web, where you can also hear recitations: http://www.islamicity.com/mosque/quran

Topics and Assignments

INTRODUCTION: ISSUES IN THE STUDY OF WOMEN AND RELIGION

January 7 Introduction to the Course

January 12 Methodology: Academic Study of Religion and Women's and Gender Studies

Rita M. Gross, "Defining Feminism, Religion, and the Study of Religion," in *Feminism and Religion: An Introduction* (Boston: Beacon Press, 1996), pp. 5-28. (ER)

WOMEN AND JUDAISM

Reclaiming Women's History

January 12 and 14

Susan Niditch, "Portrayals of Women in the Hebrew Bible, " in *Jewish Women in Historical Perspective*, Second Edition, Judith R. Baskin, ed. (Detroit: Wayne State University Press, 1998), pp. 25-45. (ER)

Carol Meyers, "Everyday Life: Women in the Period of the Hebrew Bible," in *Women's Bible Commentary*, Second Edition, Carol A. Newsom and Sharon H. Ringe, eds. (Louisville: Westminster John Knox Press, 1998), pp. 251-259. (ER)

January 19 Holiday

Rereading Classical Religious Texts: Women in the Hebrew Bible

January 21 and 26 The Image of Woman in the Accounts of Creation

Genesis 1-2.

Susan Niditch, "Genesis," in *Women's Bible Commentary*, Third Edition, Carol A. Newsom, Sharon H. Ringe, and Jacqueline E. Lapsley, eds. (Louisville: Westminster John Knox Press, 2012), pp. 27-30, 45. (ER)

Anne E. Stewart, "Eve and Her Interpreters," in *Women's Bible Commentary*, Third Edition, pp. 46-50. (ER)

"The Creation of Lilith," in *Eve and Adam: Jewish, Christian, and Muslim Readings on Genesis and Gender,"* Kristen E. Kvam, Linda S. Schearing, and Valarie H. Ziegler, eds. (Bloomington: Indiana University Press, 1999), p. 204. (ER)

Carol Meyers, *Rediscovering Eve: Ancient Israelite Women in Context* (New York: Oxford University Press, 2013), Chapter 4 (pp. 59-80), pp. 218-20. (ER)

Genesis 3

Niditch, "Genesis," pp. 30-32, 45. (ER)

Meyers, *Rediscovering Eve*, Chapter 5 (pp. 81-102), pp. 220-22. (ER)

January 28 Law and Social Setting

Niditch, "Portrayals," pp. 29-31. (ER)

Phyllis Bird, "Images of Women in the Old Testament," in *Religion and Sexism: Images of Woman in the Jewish and Christian Traditions*, Rosemary Radford Ruether, ed. (New York: Simon and Schuster, 1974), pp. 48-57. (ER)

Tikva Frymer-Kensky, "Law and Philosophy: The Case of Sex in the Bible," in *Women in the Hebrew Bible: A Reader*, Alice Bach, ed. (New York: Routledge, 1999), pp. 293-304. (ER)

February 2, 4 and 9 Women in Narrative: Troubling Texts

Genesis 16: 1-16; 21:1-21: Sarah and Hagar

Trible, *Texts of Terror*, Editor's Forward, Preface, Introduction, chapter 1.

Delores Williams, *Sisters in the Wilderness: The Challenge of Womanist God-Talk* (Maryknoll, NY: Orbis Books, 1993), pp. 3-6, 245-6. (ER)

2 Samuel 13: 1-22: Tamar

Trible, *Texts of Terror*, chapter 2.

Judges 19: 1-30: Unnamed Woman

Trible, *Texts of Terror*, chapter 3.

Judges 11: 29-40: Daughter of Jephthah

Trible, *Texts of Terror*, chapter 4.

February 11 and 16 Further Images of Women in the Hebrew Bible

Ruth 1-4: Ruth and Naomi

Trible, "A Human Comedy," in *God and the Rhetoric of Sexuality* (Philadelphia: Fortress, 1978), chap. 6. (ER)

Danna Nolan Fewell and David M. Gunn, "'A Son is Born to Naomi!': Literary Allusions and Interpretation in the Book of Ruth," in *Women in the Hebrew Bible: A Reader*, pp. 233-239. (ER)

Esther Fuchs, "Status and Role of Female Heroines in the Biblical Narrative," in *Women in the Hebrew Bible: A Reader*, pp. 77-84. (ER)

Feminist Theology: Naming the Sacred

February 18 and 23

Judith Plaskow, *Standing Again at Sinai: Judaism from a Feminist Perspective* (New York: Harper & Row, 1990), chapter 4. (ER)

February 25 First Examination due by 1:30 p.m.

WOMEN AND CHRISTIANITY

Reclaiming Women's History

February 25

Bernadette J. Brooten, "Early Christian Women and Their Cultural Context: Issues of Method in Historical Reconstruction," in *Feminist Perspectives on Biblical Scholarship*, Adela Yarbro Collins, ed. (Chico, CA: Scholars Press, 1985), pp. 65-91. (ER)

Amy L. Wordelman, "Everyday Life: Women in the Period of the New Testament," in *Women's Bible Commentary*, Second Edition, pp. 482-488. (ER)

Rereading Classical Religious Texts: Women in the New Testament

Women in the Gospel Narratives

March 2 and 4: Mark

Ross Shepard Kraemer and Mary Rose D'Angelo, eds., *Women & Christian Origins* (NewYork: Oxford University Press, 1999), pp. 129-131, 137-149. (ER)

Joanna Dewey, "The Gospel of Mark," in *Searching the Scriptures: Volume Two: A Feminist Commentary*, Elisabeth Schussler Fiorenza, ed. (New York: Crossroad, 1994), pp. 470-471, 481-486, 499, 501-502, 506-508. (ER)

Brittany E. Wilson, "Mary Magdalene and Her Interpreters," in *Women's Bible Commentary,* Third Edition, pp. 531-535. (ER)

Spring Break (March 9-13)

Women in the Pauline and Related Texts

March 16 and 18 Undisputed Letters of Paul: Romans, 1 and 2 Corinthians, Galations, Philippians, I Thessalonians, Philemon

Women & Christian Origins, pp. 199-211, 218-19, 221-26, 233-34. (ER)

Women & Christian Origins, pp. 211-20, 226-35. (ER)

Jouette M. Bassler, "1 Corinthians," in *Women's Bible Commentary*, Third Edition, pp. 557-565. (ER)

Carolyn Osiek, "Galatians," in *Women's Bible Commentary,* Third Edition, pp. 570-575. (ER)

March 23 and 25 Early Interpreters of Paul on Women and Gender: Colossians, Ephesians, 1 Timothy, Titus, 1 Peter, Acts of Paul and Thecla

Women and Christian Origins, pp. 236-253. (ER)

E. Elizabeth Johnson, "Ephesians," in *Women's Bible Commentary*, Third Edition, pp. 576-580. (ER)

Johnson, "Colossians," in *Women's Bible Commentary*, Third Edition, pp. 585-587. (ER)

Joanna Dewey, "1 Timothy," in *Women's Bible Commentary*, Third Edition, pp. 595-601. (ER)

Dewey, "Titus," in *Women's Bible Commentary*, Third Edition, p. 604. (ER)

Cynthia Briggs Kittredge, "1 Peter," in *Women's Bible Commentary*, Third Edition, pp. 616-619. (ER)

"Acts of Paul and Thecla," in *New Testament Apocrypha*, Vol. II, Wilhelm Schneemelcher, ed. Translated by A. J. B. Higgins et al. English edition edited by R. McL. Wilson. (Philadelphia: Westminster Press, 1963-66), pp. 353-364. (ER)

Feminist Theology: Naming the Sacred

March 30 and April 1

Sallie McFague, *Models of God: Theology for an Ecological, Nuclear Age* (Philadelphia: Fortress Press, 1987), pp. 97-123, 203-209. (ER)

Elizabeth A. Johnson, *Quest for the Living God: Mapping the Frontiers in the Theology of God* (New York: Continuum, 2007), pp. 100-112. (ER)

April 6 Second Examination due by 1:30 p.m.

WOMEN AND ISLAM

Reclaiming Women's History

April 6 Introductory Lecture

April 8 and 13

Leila Ahmed, *Women and Gender in Islam*, chapters 3-5.

Rereading Classical Religious Texts: Women in the Qur'an

April 15, 20, and 22

Amina Wadud, *Qur'an and Woman*, Prefaces, Introduction, chapters 1-2.

Amina Wadud, *Qur'an and Woman*, chapters 3-4, Conclusion.

Amina Wadud, *Inside the Gender Jihad: Women's Reform in Islam* (Oxford: Oneworld Publications, 2006), pp. 198-206.

Laleh Bakhtiar, "The Sublime Quran: The Misinterpretation of Chapter 4 Verse 34," in *The European Journal of Women's Studies* 18.4 (2011): 431-439.

Leila Ahmed, *A Quiet Revolution: The Veil's Resurgence from the Middle East to America* (New Haven: Yale University Press, 2011), pp. 265-76, 334-36.

April 29 Final Examination due by 4 p.m.

Requirements and Grading Policies for REL/WGS 472

1. **N.C. State Policies, Regulations, and Rules (PRR):** Students are responsible for reviewing the NC State University PRR's located at http://oucc.ncsu.edu/course-rights-and-responsibilities which pertains to their course rights and responsibilities.

2. **Attend class and participate in class discussion.** For the university attendance regulations, including the NC State policy on excused absences, see Attendance Regulation (NCSU REG02.20.03). Participation will be assessed in line with:

> *A* - Contributions in class are frequent and reflect exceptional preparation. Consistently volunteers answers and asks questions that assist the learning of the class as a whole. Class activities are enthusiastic and reflect diligence.
> *B* - Contributions in class are frequent and reflect thorough preparation. Often volunteers answers to questions. Frequently asks questions that assist the learning of the class as a whole. Class activities are approached with seriousness and diligence.

C - Contributions in class are infrequent but reflect adequate preparation. Rarely volunteers answers to questions. Infrequently asks questions, but they are appropriate and helpful to class. Class activities are approached with diligence.
D - Participates little or not at all in class.
F - Contributions in class may be frequent but reflect a lack of preparation or are disruptive of the academic environment. Class activities are approached without seriousness and a way that is disruptive to others in class. If this person were not a member of the class, valuable class time would be saved and the quality of the course improved.

3. **Questions on the reading assignments**, designed to help guide students through the material and to prepare them for class discussion, will be sent out by email. Students should write out brief responses to the questions so that they will be able to participate fully in class discussion and should formulate critical questions of their own to be shared with the class.

4. **Occasional short writing assignments**, 1-3 pages typed and double-spaced, will be sent out by email. The papers will be graded with a check plus (A), check (B), or check minus (C). Because these assignments are intended to stimulate class discussion, they must be turned in on time. Late papers will be accepted only in the case of an excused absence (see #2 above).

5. The **three examinations** (10 pages each, typed and double-spaced) will be take-home and comprised of essay questions. You must take all three exams in order to pass the course. The first exam (due by 1:30 p.m. on February 25) will cover the unit on Judaism, the second (due by 1:30 p.m. on April 6), the unit on Christianity, and the final exam (due by 4 p.m. on April 29), the unit on Islam. The scale will be as follows: 98-100 (A+);
93-97 (A); 90-92 (A-); 88-89 (B+); 83-87 (B); 80-82 (B-); 78-79 (C+); 73-77 (C);
70-72 (C-); 68-69 (D+); 63-67 (D); 60-62 (D-); 59 and below (F).
Extensions will only be granted for a valid reason (with proper documentation), in line with NC State Policy on excused absences (see #2 above).
The University's regulation on grades and grade point average (NCSU REG02.50.03).

6. **No extra credit work** will be accepted.

7. **Requirements for students electing the course for credit only (S/U).** In order to receive a grade of S, students are required to take all exams and earn a grade of C- or better in the course. Conversion from letter grading to credit only (S/U) is subject to university deadlines. Refer to the Registration and Records calendar for deadlines related to grading.

8. **Requirements for auditors (AU).** Auditors must attend class and participate in class discussion. More than two unexcused absences will mean that an official audit will not be recorded for the student.

9. **Incomplete grades (IN).** Students will not be given a temporary grade of incomplete unless they have completed two of the three exams, they have missed required work as a result of factors beyond their control, and they submit satisfactory documentary evidence of this. An IN grade not removed by the end of the next semester in which the student is enrolled or by the end of twelve months, whichever is earlier, will not be extended unless the student can present a compelling, well-documented case for the extension; otherwise the IN grade will automatically become an F.

10. Students will be expected to conduct all work within the letter and spirit of the ***NCSU Code of Student Conduct***. The instructor understands and expects that the student's signature on any test or assignment means that the student neither gave nor received unauthorized aid. For the university policy on academic integrity, refer to Code of Student Conduct policy (NCSU POL11.35.1).

11. **Academic Misconduct: Plagiarism** (NCSU POL11.35.01)
Plagiarism is the use or close imitation of the language and thoughts of another and the representation of the other's work as their own. The act of submitting work for evaluation or to meet a requirement is regarded as assurance that the work is the result of the student's own words, except as quotation marks, references, or footnotes acknowledge the use of other sources. Any ideas or materials taken from another source for either written or oral use must be fully and correctly acknowledged. Plagiarism includes, but is not limited, to the following actions:

(a) Representing the work of others as his or her own; or
(b) Submitting written materials without proper attribution or acknowledgment of the source.

Sanctions for the academic misconduct of plagiarism may include a reduction in grade or no credit on the assignment, examination, or academic exercise on which the violation occurred, and/or no credit for the course. The academic misconduct of plagiarism may result in suspension or expulsion from the university.

12. **Disability-Related Student Needs:**
Reasonable accommodations will be made for students with verifiable disabilities. In order to take advantage of available accommodations, students must register with Disability Services for Students at Suite 2221, Student Health Center, Campus Box 7509, 919-515-7653. http://dso.dasa.ncsu.edu/ For more information on NC State's policy on working with students with disabilities, please see the Academic Accommodations for Students with Disabilities Regulation (REG02.20.01) http://policies.ncsu.edu/regulation/reg-02-20-01.

13. **Recording Lectures and Discussions**
Students may not use recording devices in the classroom without explicit prior permission of the instructor. If permission is granted, there must also be no member of the class who objects. Instructor and class permission is not required when an accommodation notification from Disability Services has been received by the instructor, which identifies a student that requires the use of a recording device. However, the instructor may prohibit the use of any recording device when it would inhibit free discussion and free exchange of ideas in the classroom. (REG02.20.11)

14. **Privacy Statement**
Students may be required to disclose personally identifiable information to other students in the course, via electronic tools like email or web-postings, where relevant to the course. Examples include online discussions of class topics, and posting of student coursework. All students are expected to respect the privacy of each other by not sharing or using such information outside the class. Online Course Material Host Requirements (NCSU REG08.00.01).

15. **Anti-Discrimination Statement**
NC State University provides equality of opportunity in education and employment for all students and employees. Accordingly, NC State affirms its commitment to maintain a work environment for all employees and an academic environment for all students that is free from all forms of discrimination. Discrimination based on race, color, religion, creed, sex, national origin, age, disability, veteran status, or sexual orientation is a violation of state and federal law and/or NC State University policy and will not be tolerated. Harassment of any person (either in the form of quid pro quo or creation of a hostile environment) based on race, color, creed, sex, national origin, age, disability, veteran status, or sexual orientation also is a violation of state and federal law and/or NC State University policy and will not be tolerated. Retaliation against any person who complains about discrimination is also prohibited. Any person who feels that he or she has been the subject of prohibited discrimination, harassment, or retaliation should contact the Office of Equal Opportunity (OEO) at 919-515-3148.

16. The instructor reserves the right to change the course schedule and syllabus content with appropriate notification to students.

17. **CHASS Career Services**
Explore career options related to your major, make decisions about your major or minor, build resumes and cover letters, prepare for interviews, develop internship/ job search strategies, maximize career fairs, and more. Use ePACK to make an appointment with your career counselor: Jane Matthews or Woody Catoe. Career Development Center, 2100 Pullen Hall. http://careers.ncsu.edu [Please be aware that the standard major/career choosing aids **mis**classify Religious Studies as "Artistic" and "Social." Religious Studies belong in "Investigative," with, e.g., pre-law, pre-med and STEM majors/careers.]

18. **Grading**
10% writing assignments and class participation
30% first examination
30% second examination
30% final examination

Requirements and Grading Policies for REL/WGS 472H
Faculty-Initiated Honors Option

1. **Attendance and class participation.** Same as above.

2. **Occasional writing assignments.** Same as above.

3. Honors students will have **three take-home examinations** (12 pages each, typed and double-spaced) comprised of essay questions and assigned letter grades. The first exam (due by 1:30 p.m. on February 25) will cover the unit on Judaism, the second (due by 1:30 p.m. on April 6), the unit on Christianity, and the final exam (due by 4 p.m. on April 29), the unit on Islam.

Extensions will only be granted for a valid reason (with proper documentation), in line with NC State Policy on excused absences (see #2 above on the syllabus).

4. **Grading**
10% writing assignments and class participation
30% first examination
30% second examination
30% final examination

REL/WGS 572 Additional Course Requirements

1. Attendance and class participation. We will have at least three additional meetings for graduate students, based on and arranged convenient to student schedules, for graduate student discussions.

2. Occasional writing assignments, 3-4 pages. Longer than undergraduate papers, requiring a greater level of critical assessment of the readings, and including questions of their own to be shared with the class.

3. Three take-home examinations (15 pages each, typed and double-spaced), comprised of essay questions and assigned letter grades. Different questions than the undergraduate examinations, with longer answers, and requiring a higher level of critical assessment of the readings.

Grading
10% writing assignments and class participation
30% first examination
30% second examination
30% final examination

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

NC STATE UNIVERSITY

Department of Chemical and Biomolecular Engineering

Campus Box 7905
2012 Engineering Building I
Raleigh, NC 27695-7905
lisa_bullard@ncsu.edu
919-515-7455

March 24, 2016

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

From: Peter S. Fedkiw, Head, Chemical and Biomolecular Engineering

Subject: Minor changes to 8-semester displays

By means of this memorandum, the Department of Chemical and Biomolecular Engineering proposes to make minor corrections and formatting adjustments to the 8-semester displays for the undergraduate curricula, including all concentrations and dual majors. Those changes are annotated in the attached marked up curricula.

Justification: Since the last update in 2013, there have been multiple actions approved through UCCC which were never posted to the 8-semester displays.

ENDORSED BY:

Peter Fedkiw 3/30/16
Department Head, Chemical and Biomolecular Engineering Date

1 April 16
Chair, COE Courses & Curricula Committee Date

Jerome P. Lavelle 4/04/16
College of Engineering Dean Date

Chair, University Courses & Curricula Committee Date

Chair, Dean of Undergraduate Academic Programs Date

APPROVED:

Provost's Office Date

Chemical Engineering (BS) (14CHEBS)

Semester Display Effective Date: 1.2013

FRESHMAN YEAR

Fall Semester	Credit		Spring Semester	Credit
CH 101 Chemistry, A Molecular Science[4]	3		CH 201 Chemistry – Quantitative Sci.[1]	3
CH 102 General Chemistry Lab1[4]	1		CH 202 Quantitative Chem Lab	1
E 101 Introduction to Engr & Prob Solv[1]	1		MA 241 Calculus II[4]	4
E 115 Intro to Computing Environ	1		PY 205 Physics for Engineers & Scientists I[4]	3
ENG 101 Academic Writing and Research[1]	4		PY 206 Physics for Engineer & Scientists I Lab	1
MA 141 Calculus I[4]	4		EC 205 Economics (or EC 201 or ARE 201)*	3
HES_*** Health & Exercise Studies Course*	1		HES_*** Health & Exercise Studies Course*	1
	15			**16**

SOPHOMORE YEAR

Fall Semester	Credit		Spring Semester	Credit
CH 221 Organic Chemistry I[5]	3		CH 223 Organic Chemistry II[5]	3
CH 222 Organic Chemistry I Lab[5]	1		CH 224 Organic Chemistry II Lab[5]	1
CHE 205 Chemical Proc Prin[1]	4		CHE 225 Intro Chem Engr Analysis[1]	3
MA 242 Calculus III[1]	4		MA 341 Applied Differential Eq[1]	3
GEP Requirement*	3		PY 208 Physics Engr & Scientists II	3
	15		PY 209 Physics for Engineer & Scientists II Lab	1
			GEP Requirement*	3
				17

JUNIOR YEAR

Fall Semester	Credit		Spring Semester	Credit
CH 315 Quantitative Analysis	4		CH *** Chemistry Elective[2]	4
CHE 311 Transport Processes I[1]	3		CHE 312 Transport Processes II	3
CHE 315 Chem Process Thermo[1]	3		CHE 316 Thermo of Chem & Phase Eq	3
ECE 331 Prin Electrical Engr ***or***			CHE 330 Chem Engr Lab I	4
MSE 201 Struct & Prop Engr Mat	3		Free Elective	3
GEP Requirement*	3			
CHE 395 Professional Dev Seminar	1			**17**
	17			

SENIOR YEAR

Fall Semester	Credit		Spring Semester	Credit
CHE 331 Chem Engr Lab II	2		CHE 435 Proc System Analy & Control	3
CHE 446 Des & Analy Chem Reactors	3		CHE 451 CHE Design II	3
CHE 450 CHE Design I	3		Technical Elective[3]	3
Technical Elective[3]	3		GEP Requirement*	3
GEP Requirement*	3		GEP IP Requirement*	2-3
	14			**14-15**

Minimum Credit Hours Required for Graduation:	125

Major/Program requirements and footnotes:

[1] Minimum grade of C- required.

[2] Chemistry electives include: CH 437 Physical Chemistry; ~~CH 461 Introduction to Fiber-Forming Polymers~~; BCH 351 General Biochemistry; BCH 451 Princ of Biochemistry; FS 402 Chem of Food & Bioprocessed Materials; PSE 335 Principles of Green Chemistry; PCC 461/464 Chem of Polymeric Materials; CH 610 Special Topics in Chemistry; ~~CH 615 Chemical Separations (note: an additional hour of CH 499 would also be required to total 4 hours).~~

[3] Technical Electives: BEC 462, BAE 422, CE 373, CE 476, CE 477, CE 479, CE 484, E 304, ECE 331, ISE 311, ISE 443, CHE 460 and higher electives, MAE 206, MAE 208, MAE 314, MAE 406, MAE 421, MSE 201, NE 404, NE 419, TE 466

[4] Grade of C (2.0) or higher required.

[5] CH 225/226 may substitute for CH 221/222 and CH 227/228 may substitute for CH 223/224.

6 CH 103/104 may substitute for CH 101/102, and CH 203/204 may substitute for CH 201/202.

***General Education Program (GEP) requirements:**

To complete the requirements for graduation and the General Education Program, the following credit hours and co-requisites must be satisfied. University approved GEP course lists for each category can be found at http://oucc.dasa.ncsu.edu/general-education-program-gep/.

Health & Exercise Studies - 2 hours to be selected from the approved GEP Health & Exercise Studies list.
a. One fitness and wellness course (any Health & Exercise Studies 100-level course).
b. One additional credit hour of Health & Exercise Studies activity courses.
HUMANITIES - 6 credits to be selected in two different disciplines (two different course prefixes) from the approved GEP Humanities list.
SOCIAL SCIENCES - 3 credits to be selected in a discipline other than economics from the approved GEP Social Sciences list. EC 205 (or EC 201 or ARE 201) taken as part of the Major requirements satisfies 3 credit hours of the 6 credit hours needed to fulfill the GEP Social Sciences requirement.
ADDITIONAL BREADTH - 3 credits to be selected from the approved GEP Humanities, Social Sciences or Visual and Performing Arts lists.
INTERDISCIPLINARY PERSPECTIVES - 5 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 complete the General Education requirements. Choose course(s) that are identified on the approved GEP course 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.

Chemical Engineering (BS): Biomanufacturing Sciences (14CHEBMF)

Semester Display Effective Date: 1.2013

FRESHMAN YEAR

Fall Semester	Credit		Spring Semester	Credit
CH 101 Chemistry, A Molecular Science[4], C	3		CH 201 Chemistry – Quantitative Sci.[1], C	3
CH 102 General Chemistry Lab[4], C	1		CH 202 Quantitative Chem Lab C	1
E 101 Introduction to Engr & Prob Solv[1]	1		MA 241 Calculus II[4]	4
E 115 Intro to Computing Environ	1		PY 205 Physics for Engr & Sc I[4]	3
ENG 101 Academic Writing and Research[1]	4		PY 206 Physics for Engineer & Scientists I Lab 4	1
MA 141 Calculus I[4]	4		EC 205 Economics (**or** EC 201 **or** ARE 201)*	3
HES_*** Health & Exercise Studies Course	1		HES_*** Health & Exercise Studies Course	1
	15			**16**

SOPHOMORE YEAR

Fall Semester	Credit		Spring Semester	Credit
BEC 220 Intro Biomanufacturing	1		BIO 183 Intro Biology: Cellular & Molecular	4
CH 221 Organic Chemistry I[5], 1	3		CH 223 Organic Chemistry II[5]	3
CH 222 Organic Chemistry I Lab[5]	1		CH 224 Organic Chemistry II Lab[5]	1
CHE 205 Chemical Proc Prin[1]	4		CHE 225 Chemical Proc Systems[1]	3
MA 242 Calculus III[1]	4		MA 341 Applied Differential Eq[1]	3
PY 208 Physics Engr & Scientists II	3		GEP Requirement*	3
PY 209 Physics for Engineer & Scientists II Lab	1			
	17			**17**

JUNIOR YEAR

Fall Semester	Credit		Spring Semester	Credit
BCH 451 Intro Biochemistry	4		BBS 426 Industrial Microbiology & Bioman Lab	2
BEC 363 Found. of Recomb Microorg for Biomanuf.	2		BEC 330 Prin & Applications of Biosparations	2
BEC 463 Ferm. of Recomb Microorg	2	move down + align	CHE 312 Transport Processes II	3
CHE 311 Transport Processes I[1]	3		CHE 316 Thermo of Chem & Phase Eq	3
CHE 315 Chem Process Thermo[1]	3		Free Elective	3
GEP Requirement*	3		GEP Requirement*	3
	17			**16**

SENIOR YEAR

Fall Semester	Credit		Spring Semester	Credit
BEC 436 Downstream Proc of Biomaterials	2		Biomanufacturing Elective[2]	2
BEC 480 Large Scale Fermentation OR	2		CHE 435 Proc System Analy & Control	3
BEC 485 Large Scale Recovery & Purification			CHE 451 CHE Design II	3
CHE 395 Professional Dev Seminar	1		Bioethics Course (GEP IP Req*)[3]	3
CHE 447 Bioreactor Engineering	3		GEP Requirement*	2-3
CHE 450 CHE Design I	3			
GEP Requirement*	3			**13-14**
	14			

Minimum Credit Hours Required for Graduation*[I,J,K]:	125

Major/Program requirements and footnotes:

[1] Minimum grade of (C-) required.

[2] The Biomanufacturing elective course must be selected from the following list: BEC 440, 462, ~~463~~ 441, 475, 480, 483, 485, 488, 497, 541. NOTE: Course selected from the choice of either BEC 480/485 cannot be used to satisfy this requirement (i.e. counted twice).

[3] The bioethics course must be selected from: IDS 201, 303; STS 302, 304, 320; STS(PHI) 325

[4] Grade of C (2.0) or higher required.

[5] CH 225/226 may substitute for CH 221/222 and CH 227/228 may substitute for CH 223/224.

6 CH 103/104 may substitute for CH 101/102, and CH 203/204 may substitute for CH 201/202.

***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.dasa.ncsu.edu/general-education-program-gep/.

A. Mathematical Sciences (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:

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

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

D. Social Sciences (3 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, EC 201, or ARE 201**

E. Health & Exercise Studies (2 credit hours – at least one 100-level Health & Exercise Studies Course)
Choose from the University approved GEP Health & Exercise Studies 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. Interdisciplinary Perspectives (5-6 credit hours)
2 credits to be selected from the approved GEP Interdisciplinary Perspectives list. Course chosen to meet the Biotech Minor Group E requirement in the Major satisfies 3 credit hours of the 5 credit hours needed to fulfill the GEP Interdisciplinary Perspectives 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:

I. U.S. Diversity(USD)
Choose from the University approved GEP U.S. Diversity course list or choose a course identified on the approved GEP course lists

as meeting the U.S. Diversity (USD) co-requisite. The following course(s) completed as part of the Major requirements may fulfill this requirement:

J. Global Knowledge(GK)

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

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

Chemical Engineering (BS): Nanoscience (14CHEBS-14CHENAN)

Semester Display Effective Date: 1.2013

FRESHMAN YEAR

Fall Semester	Credit		Spring Semester	Credit
CH 101 Chemistry, A Molecular Science[4] 1, 6	3		CH 201 Chemistry – Quantitative Sci. 1, 6	3
CH 102 General Chemistry Lab[4] 1, 6	1		CH 202 Quantitative Chem Lab 6	1
E 101 Introduction to Engr & Prob Solv[1]	1		MA 241 Calculus II[4]	4
E 115 Intro to Computing Environ	1		PY 205 Physics for Engineers & Scientists I[4]	3
ENG 101 Academic Writing and Research[1]	4		PY 206 Physics for Engineers & Scientists I Lab 4	1
MA 141 Calculus I[4]	4		EC 205 Economics (or EC 201 or ARE 201)*	3
HES_*** Health & Exercise Studies Course*	1		HES_*** Health & Exercise Studies Course*	1
	15			**16**

SOPHOMORE YEAR

Fall Semester	Credit		Spring Semester	Credit
CH 221 Organic Chemistry I[5] 1	3		CH 223 Organic Chemistry II[5]	3
CH 222 Organic Chemistry I Lab[5]	1		CH 224 Organic Chemistry II Lab[5]	1
CHE 205 Chemical Proc Prin 1	4		CHE 225 Chemical Proc Systems 1	3
MA 242 Calculus III 1	4		MA 341 Applied Differential Eq 1	3
PY 208 Physics for Engineers & Scientists II	3		MSE 201 Struct & Prop Engr Mat	3
PY 209 Physics for Engineers & Scientists II Lab	1		GEP Requirement*	3
	16			**16**

JUNIOR YEAR

Fall Semester	Credit		Spring Semester	Credit
CH *** Chemistry Elective[2]	4		CH 437 Phys Chem for Engrs	4
CHE 311 Transport Processes I 1	3		CHE 312 Transport Processes II	3
CHE 315 Chem Process Thermo 1	3		CHE 316 Thermo of Chem & Phase Eq	3
GEP Requirement*	3		CHE 330 Chem Engr Lab I	4
GEP Requirement*	3		Free Elective	3
CHE 395 Professional Dev Seminar	1			
	17			**17**

SENIOR YEAR

Fall Semester	Credit		Spring Semester	Credit
CHE 331 Chem Engr Lab II	2		CHE 435 Proc System Analy & Control	3
CHE 446 Des & Analy Chem Reactors	3		CHE 451 CHE Design II	3
CHE 450 CHE Design I	3		Nanoscience Elective[3]	3
Nanoscience Elective[3]	3		GEP Requirement*	3
GEP Requirement*	3		GEP IP Requirement*	2-3
	14			**14-15**

Minimum Credit Hours Required for Graduation:	125

Major/Program requirements and footnotes:

[1] Minimum grade of (C-) required. Princ. of ? 316

[2] Chemistry electives include: ~~(A) CH 315: Quantitative Analysis; (B) CH/TC 461: Introduction to Fiber Forming Polymers; (C)~~ BCH 451: Biochemistry; ~~(D) CH 610: Special Topics in Chemistry; (E) CH 615: Chemical Separations (note: an additional hour of CH 499 would also be required to total 4 hours);~~ (F) FS 402: Food Science; ~~(G) PCC 461: Chemistry of Polymeric Materials; (H)~~ BCH 351 ~~(I) FS 402~~ General Biochemistry delete ? Chemistry of Food and Bioprocessed Materials 464

[3] Nanosciences Electives include: CHE/MSE 455: Polymer Technology and Engineering, CH 460: Chemical Properties of Electronic Materials, CHE 461: Polymer Sciences and Technology, CHE 462: Colloid Science and Macromolecular Physics, CHE 467: Rheology, CHE 597D: Colloidal and Macromolecular Physics, CHE 597J: Polymers at Interfaces and in Confined Geometries, E 304 Introduction to Nanoscience, ECE 331: Principles of Electrical Engineering I, CH 795M: Special Topics in Chemistry, MSE 425: Polymer Science & Technology, MSE 331: Elec Properties of Materials, MSE 460: Microelectronic Materials, PY 407: Introduction to Modern Physics, BEC 462: Bio-Nanotechnology. Additional nanoscience electives may be approved on a case-by-case basis as new courses are introduced.

[4] Grade of C (2.0) or higher required.

[5] CH 225/226 may substitute for CH 221/222 and CH 227/228 may substitute for CH 223/224.

[6] CH 103/104 may substitute for CH 101/102 and CH 203/204 may substitute for CH 201/202.

***General Education Program (GEP) requirements:**

To complete the requirements for graduation and the General Education Program, the following credit hours and co-requisites must be satisfied. University approved GEP course lists for each category can be found at http://oucc.dasa.ncsu.edu/general-education-program-gep/.

Health & Exercise Studies - 2 hours to be selected from the approved GEP Health & Exercise Studies list.

a. One fitness and wellness course (any Health & Exercise Studies 100-level course).

b. One additional credit hour of Health & Exercise Studies activity courses.

HUMANITIES - 6 credits to be selected in two different disciplines (two different course prefixes) from the approved GEP Humanities list.

SOCIAL SCIENCES - 3 credits to be selected in a discipline other than economics from the approved GEP Social Sciences list. EC 205 (or EC 201 or ARE 201) taken as part of the Major requirements satisfies 3 credit hours of the 6 credit hours needed to fulfill the GEP Social Sciences requirement.

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 complete the General Education requirements. Choose course(s) that are identified on the approved GEP course 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.

Chemical Engineering (BS): Sustainable Engineering, Energy and the Environment (14CHEBS-14CHESEE)

Semester Display Effective Date: 1.2013

FRESHMAN YEAR

Fall Semester	Credit		Spring Semester	Credit
CH 101 Chemistry, A Molecular Science[4] ,7	3		CH 201 Chemistry – Quantitative Sci.[1], 7	3
CH 102 General Chemistry Lab[4] ,7	1		CH 202 Quantitative Chem Lab 7	1
E 101 Introduction to Engr & Prob Solv[1]	1		MA 241 Calculus II[4]	4
E 115 Intro to Computing Environ	1		PY 205 Physics for Engineers & Scientists I[4]	3
ENG 101 Academic Writing and Research[1]	4		PY 206 Physics for Engineers & Scientists I Lab 4	1
MA 141 Calculus I[4]	4		EC 205 Economics (or EC 201 or ARE 201)*	3
HESF 1**Health & Exercise Studies Course*	1		HES_***Health & Exercise Studies Course*	1
	15			**16**

SOPHOMORE YEAR

Fall Semester	Credit		Spring Semester	Credit
CH 221 Organic Chemistry I[6], 1	3		CH 223 Organic Chemistry II[6]	3
CH 222 Organic Chemistry I Lab[6]	1		CH 224 Organic Chemistry II Lab[6]	1
CHE 205 Chemical Proc Prin[1]	4		CHE 225 Chemical Proc Systems[1]	3
MA 242 Calculus III[1]	4		MA 341 Applied Differential Eq[1]	3
GEP Requirement*	3		PY 208 Physics for Engineers & Scientists II	~~4~~ 3
			PY 209 Physics for Engineers & Scientists II Lab	3 1
	15		GEP Requirement*	
				17

insert PY 209 cr.

JUNIOR YEAR

Fall Semester	Credit		Spring Semester	Credit
PSE 335 Principles of Green Chemistry	4		CH *** Chemistry Elective[2]	4
CHE 311 Transport Processes I[1]	3		CHE 312 Transport Processes II	3
CHE 315 Chem Process Thermo[1]	3		CHE 316 Thermo of Chem & Phase Eq	3
CHE 497 Chem Engr Project I	3		CHE 330 Chem Engr Lab I	4
Free Elective	3		GEP Requirement*	3
	16			**17**

SENIOR YEAR

Fall Semester	Credit		Spring Semester	Credit
CHE 331 Chem Engr Lab II	2		CHE 435 Proc System Analy & Control	3
CHE 446 Des & Analy Chem Reactors	3		CHE 451 CHE Design II	3
CHE 450 CHE Design I	3		Concentration Elective[3]	3
Concentration Elective[3]	3		GEP Requirement*	3
GEP Requirement*	3		Restricted Elective[5]	2-3
CHE 395 Professional Dev Seminar	1			
	15			**14-15**

Minimum Credit Hours Required for Graduation*:	125

Major/Program requirements and footnotes:

[1] Minimum grade of (C-) required. ~~C-~~ 3/6

[2] Chemistry electives include: CH 315 Quantitative Analysis, CH 437 Physical Chemistry; ~~CH 461 Introduction to Fiber-Forming Polymers~~; BCH 351 General Biochemistry; BCH 451 Princ of Biochemistry; FS 402 Chem of Food & Bioprocessed Materials; ~~WPS 301 Introduction to Wood Chemistry~~; PCC 461/464 Chem of Polymeric Materials; ~~CH 610 Special Topics in Chemistry; CH 615 Chemical Separations (note: an additional hour of CH 499 would also be required to total 4 hours).~~ delete delete

[3] Concentration electives include: ~~(A)~~ CE 373; Principles of Environmental Engineering; ~~(B)~~ CE 476: Air Pollution Control; ~~(C)~~ CE 484: Water and Waste Systems; ~~(D)~~ CE 456: Air Quality; ~~(E)~~ CE 477: Solid Waste Management; ~~(F)~~ CE 478: Energy and Climate; PSE 425 Bioenergy and Biomaterials Engineering; ~~PSE(WPS)~~ 476: Environmental Life Cycle Analysis; BAE 528: Biomass to Renewable Energy Processes. FB/PSE

[4] Grade of C (2.0) or higher required.

[5] Choose a course from the following restricted electives list. This requirement will count toward satisfying the GEP Interdisciplinary Perspectives requirement. Some courses may also count in fulfilling the GEP Global Knowledge co-requisite as indicated (GK). Please consult with your advisor.

- ES 100 Introduction to Environmental Sciences (GK)
- ES 200 Climate Change and Sustainability (GK)
- ES 300 Energy and Environment (GK)
- IDS 201 Environmental Ethics (GK)
- SMT 231 Sustainable Manufacturing
- SMT 232 Recycling to Create a Sustainable Environment
- PCC 401 Impact of Industry on the Environment and Society

[6] CH 225/226 may substitute for CH 221/222 and CH 227/228 may substitute for CH 223/224.
↑ CH 103/104 may substitute for CH 101/102 and CH 203/204 may substitute for CH 201/202.

***General Education Program (GEP) requirements:**
To complete the requirements for graduation and the General Education Program, the following credit hours and co-requisites must be satisfied. University approved GEP course lists for each category can be found at http://oucc.dasa.ncsu.edu/general-education-

program-gep/.

Health and Exercise Studies- 2 hours to be selected from the approved GEP Health & Exercise Studies list.
a. One Health and Exercise Studies course (any Health and Exercise Studies 100-level course).
b. One additional credit hour of Health and Exercise Studies activity courses.
HUMANITIES - 6 credits to be selected in two different disciplines (two different course prefixes) from the approved GEP Humanities list.
SOCIAL SCIENCES - 3 credits to be selected in a discipline other than economics from the approved GEP Social Sciences list. EC 205 (or EC 201 or ARE 201) taken as part of the Major requirements satisfies 3 credit hours of the 6 credit hours needed to fulfill the GEP Social Sciences requirement.
ADDITIONAL BREADTH - 3 credits to be selected from the approved GEP Humanities, Social Sciences or Visual and Performing Arts lists.
INTERDISCIPLINARY PERSPECTIVES - 3 credits to be selected from the approved GEP Interdisciplinary Perspectives list. *Courses taken to satisfy the restricted elective requirement will fulfill 2-3 hours of IP.*

Co-requisites:
U.S. Diversity and Global Knowledge co-requisites must be satisfied to complete the General Education requirements. Choose course(s) that are identified on the approved GEP course 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.

Chemical Engineering (BS): Honors Program (14CHEBS-14CHEHON)

Semester Display Effective Date: 1.2013

FRESHMAN YEAR

Fall Semester	Credit		Spring Semester	Credit
CH 101 Chemistry, A Molecular Science[7], 9	3		CH 201 Chem.- Quantitative Science 1,9	3
CH 102 General Chemistry Lab[7], 9	1		CH 202 Quantitative Chem. Lab 9	1
E 101 Introduction to Engr & Prob Solv[1]	1		MA 241 Calculus II[7]	4
E 115 Intro to Computing Envir	1		PY 205 Physics for Engineering & Scientists I[7]	4
ENG 101 Academic Writing and Research[1]	4		PY 206 Physics for Engineers & Scientists I Lab[7]	3
MA 141 Calculus I[7]	4		remove space → EC 205 Economics (or EC 201 or ARE 201)*	1
HES_***Health & Exercise Studies Course*	1			
	15		HES_***Health & Exercise Studies Course*	16

insert "1" for PY 205 credit

move down

SOPHOMORE YEAR

Fall Semester	Credit		Spring Semester	Credit
CH 221 Organic Chemistry I[8], 1	3		CH 223 Organic Chemistry II[8]	3
CH 222 Organic Chemistry I Lab[8]	1		CH 224 Organic Chemistry II Lab[8]	1
CHE 205 Chemical Process Prin 1	4		PY 208 Physics for Engineers & Scientists II	3
MA 242 Calculus III 1	4		PY 209 Physics for Engineers & Scientists II Lab	3
GEP Requirement*	3		CHE 225 Chemical Proc Systems 1	4
	15		MA 341 Applied Differential Eqns 1	3
			GEP Requirement*	
				17

move down

insert "1" for PY 208 credit hr.

JUNIOR YEAR

CH 316 Quantitative Analysis Lab 1

add:

Fall Semester	Credit		Spring Semester	Credit
CH 315 Quantitative Analysis	~~4~~ 3		CH *** Chemistry Elective[3]	4
CHE 311H Transport Processes I 1	3		remove spaces → CHE 312H Transport Processes II	3
CHE 315 Chem. Process Thermo 1	3			3
MA *** Mathematics Elective[2]	3		CHE 316 Thermo of Chem & Phase Eq	4
GEP Requirement*	3			3
remove space			CHE 330 Chem Engr Lab I	
CHE 395 Professional Dev Seminar	1			17
	17		ENG 333 Comm for Science and Research	

SENIOR YEAR

Fall Semester	Credit		Spring Semester	Credit

CHE 497 Chem Engr Projects	3		CHE 435 Proc Sys Analy & Control	3
CHE 446 Des & Analy Chem. React	3		CHE 451 CHE Design II	3
CHE 450 CHE Design I	3		CHE *** Honors Electives[5]	3
CHE 7** CHE Elective[4]	3			2-3
GEP Requirement*	3		GEP Requirement*	1
	15		GEP IP Requirement	**15-16**
			CHE 495 Honors Thesis Prep[6]	

remove space →

align credits w/ courses

Minimum Credit Hours Required for Graduation:	**127**

Major/Program Requirements and footnotes:

[1] Minimum grade of (C-) required.

[2] Math electives include: MA 401, 402, 405, 427, 501.

[3] Chemistry electives include: PCC 461: Chemistry of Polymeric Materials; CH 437: Physical Chemistry; ~~CH/TC 461: Introduction to Fiber Forming Polymers;~~ BCH 351 BCH 451: Biochemistry; FS 402: ~~Food Science;~~ CH 610: Special Topics in Chemistry; ~~CH 615: Chemical Separations (note: an additional hour of CH 499 would also be required to total 4 hours).~~

: General Biochemistry

1464

Princ. of

chemistry of Food & ~~Bioprocessed~~ Bioprocessed Materials

[4] CHE 7xx includes CHE 711, 713, 715, 717.

[5] Honors electives include CHE 460 and above, CHE 5xx, CHE 7xx.

[6] An honors thesis is required for completion of the Honors Program.

[7] Grade of C (2.0) or higher required.

[8] CH 225/226 may substitute for CH 221/222 and CH 227/228 may substitute for CH 223/224.

9 CH 103/104 may substitute for CH 101/102 and CH 203/204 may substitute for CH 201/202.

***General Education Program (GEP) requirements:**

To complete the requirements for graduation and the General Education Program, the following credit hours and co-requisites must be satisfied. University approved GEP course lists for each category can be found at http://oucc.dasa.ncsu.edu/general-education-program-gep/.

Health & Exercise Studies - 2 hours to be selected from the approved GEP Health & Exercise Studies list.

a. One fitness and wellness course (any Health & Exercise Studies 100-level course).

b. One additional credit hour of Health & Exercise Studies activity courses.

HUMANITIES - 6 credits to be selected in two different disciplines (two different course prefixes) from the approved GEP Humanities list.

SOCIAL SCIENCES - 3 credits to be selected in a discipline other than economics from the approved GEP Social Sciences list. EC 205 (or EC 201 or ARE 201) taken as part of the Major requirements satisfies 3 credit hours of the 6 credit hours needed to fulfill the GEP Social Sciences requirement.

ADDITIONAL BREADTH - 3 credits to be selected from the approved GEP Humanities, Social Sciences or Visual and Performing Arts lists.

INTERDISCIPLINARY PERSPECTIVES - 5 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 complete the General Education requirements. Choose course(s) that are identified on the approved GEP course 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.

Dual Major: Chemical Engineering & Textile Engineering (BS): Dual Major (14CHEBS-14CHETE)

Semester Display Effective Date: 1.2013

FRESHMAN YEAR

Fall Semester	Credit	Spring Semester	Credit
CH 101 Chemistry, A Molecular Science[1]	3	CH 201 Chemistry – Quantitative Sci.[2]	3
CH 102 General Chemistry Lab[1]	1	CH 202 Quantitative Chem Lab	1
E 101 Introduction to Engr & Prob Solv[2]	1	MA 241 Calculus II[1]	4
E 115 Intro to Computing Environ	1	PY 205 Physics for Engineers & Scientist I[1]	3
ENG 101 Academic Writing and Research[2]	4	PY 206 Physics for Engineers & Scientists I Lab	1
MA 141 Calculus I[1]	4	TE 110 Comp Based Model Engineers	3
HES_*** Health & Exercise Studies Course*	1	HES_*** Health & Exercise Studies Course*	1
	15		**16**

SOPHOMORE YEAR

Fall Semester	Credit	Spring Semester	Credit
CH 221 Organic Chemistry I[3]	3	TE 201 Textile Engr. Sci.	4
CH 222 Organic Chemistry I Lab	1	MAE 206 Engr Statics OR	
CHE 205 Chemical Proc Prin[2]	4	CE 214 Engr Statics	3
MA 242 Calculus III[2]	4	MA 341 Applied Differential Eq[2]	3
PY 208 Physics for Engineers & Scientists II	3	CH 223 Organic Chemistry II	3
PY 209 Physics for Engineers & Scientists II Lab	1	CH 224 Organic Chemistry II Lab	1
		CHE 225 Chemical Proc Systems[2]	3
	16		**17**

JUNIOR YEAR

CH 316 Quantitative Analysis Lab 1

insert:

Fall Semester	Credit	Spring Semester	Credit
CH 315 Quantitative Analysis	3	TE 302 Textile Mfg Proc II	4
TE 301 Engr Textile Structures I	3	ST 370 Prob & Stat for Engineers	3
GC 120 Found of Graphics	3	CHE 312 Transport Processes II	3
CHE 311 Transport Processes I[2]	3	CHE 316 Thermo of Chem & Phase Eq	3
CHE 315 Chem Process Thermo[2,4]	3	TE 205 Analog & Digital Cirguits[5]	4
CHE 395 Professional Dev Seminar	1		
	17		**17**

SENIOR YEAR

Fall Semester	Credit	Spring Semester	Credit
CHE 446 Des & Analy Chem Reactors	3	TE 402 Textile Engr Des II[6]	4
CHE 450 CHE Design I	3	TE 404 Six Sigma Quality	3
GEP IP Requirement*	3	TE 424 Tex Engr Qual Impr Lab	1
TE 401 Textile Engr Des I	4	GEP Requirement*	3
EC 205 Economics* OR	3	GEP Requirement*	3
EC 201 Economics* OR		GEP Requirement*	3

ARE 201 Economics*	16			17

5TH YEAR

Fall Semester	Credit		Spring Semester	Credit
CHE 330 Chem Engr Lab I	4			
CHE 435 Proc System Analy & Control	3			
PCC 301 Tech of Dyeing & Finish	3			
GEP IP Requirement*	1			
GEP IP Requirement*	2-3			
	16			

Minimum Credit Hours Required for Graduation*:	147

Major/Program requirements and footnotes:

[1] Grade of C (2.0) or higher required.
[2] Minimum grade of C- required.
[3] CH 221 will replace TE 200 (in the Textile Engineering curriculum)
[4] CHE 315/314 will replace TE 303 (in the Textile Engineering curriculum)
[5] TE 402 will replace CHE 451 (in the Chemical Engineering curriculum)
6 CH 103/104 may substitute for CH 101/102 and CH 203/204 may substitute for CH 201/202
7 CH 225/226 may substitute for CH 221/222 and CH 227/228 may substitute for CH 223/224.

*** General Education Program (GEP) requirements:**

To complete the requirements for graduation and the General Education Program, the following credit hours and co-requisites must be satisfied. University approved GEP course lists for each category can be found at http://oucc.dasa.ncsu.edu/general-education-program/.

Health & Exercise Studies - 2 hours to be selected from the approved GEP Health & Exercise Studies list.

a. One fitness and wellness course (any Health & Exercise Studies 100-level course).
b. One additional credit hour of Health & Exercise Studies activity courses.
HUMANITIES – 6 credits to be selected in two different disciplines (two different course prefixes) from the approved GEP Humanities list.
SOCIAL SCIENCES - 3 credits to be selected in a discipline other than economics from the approved GEP Social Sciences list. EC 205, 201 or ARE 201 taken as part of the Major requirements satisfies 3 credit hours of the 6 credit hours needed to fulfill the GEP Social Sciences requirement.
ADDITIONAL BREADTH - 3 credits to be selected from the approved GEP Humanities, Social Sciences or Visual and Performing Arts lists.
INTERDISCIPLINARY PERSPECTIVES - 5 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 complete the General Education requirements. Choose course(s) that are identified on the approved GEP course 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.

Paper Science & Engineering (BS) and Chemical Engineering (BS) (Dual Major) (15PSEBS-15PSENDM)

Semester Display Effective Date: 1.2013

FRESHMAN YEAR

Fall Semester	Credit		Spring Semester	Credit
CH 101 Chemistry, A Molecular Science[3], 5	3		CH 201 Chemistry, A Quant Science[1], 5	3
CH 102 General Chemistry Lab[3], 5	1		CH 202 Quantitative Chemistry Lab[1], 5	1
E 101 Introduction to Engr & Prob Solv[1]	1		EC 205 Economics (or EC 201 or ARE 201)*	3
E 115 Intro to Computing Environ	1		MA 241 Calculus II[3]	4
ENG 101 Academic Writing and Research[1]	4		PY 205 Physics Engr & Scientists I[3]	~~4~~ 3
MA 141 Calculus I[3]	4		PSE 201 Pulping & Papermaking Technology[1]	3
HES_*** Health & Exercise Studies Course *	1			
	15		insert: PY 206 Physics Engr & Sci I Lab 3	18 1

SOPHOMORE YEAR

Fall Semester	Credit		Spring Semester	Credit
CH 221 Organic Chemistry I 4, 1	3		CH 223 Organic Chemistry II 4	3
CH 222 Organic Chemistry I Lab 4	1		CH 224 Organic Chemistry II Lab 4	1
CHE 205 Chemical Proc Princ[1]	4		CHE 225 Chemical Proc Systems[1]	3
MA 242 Calculus III[1]	4		MA 341 Applied Differential Eq[1]	3
PSE 212 Paper Properties[1]	4		PY 208 Physics for Engr & Scientists II	~~4~~ 3
HES_*** Health & Exercise Studies Course*	1		PSE 371 Pulping Process Analysis[1]	3
	17		Insert: PY 209 Physics for Engr & Sci II Lab 1	17

JUNIOR YEAR

Fall Semester	Credit		Spring Semester	Credit
insert: CH 316 Quantitative Analysis Lab	1			
CH 315 Quantitative Analysis	~~4~~ 3		CHE 312 Transport Processes II	3
CHE 311 Transport Processes I[1]	3		CHE 316 Thermo of Chem & Phase Eq	3
CHE 315 Chem Process Thermo[1]	3		PSE 332 Wood & Pulping Chemistry	3
PSE 211 Pulp & Paper Internship[2]	1		PSE 360 Pulp & Paper Unit Proc. II	3
PSE 322 Wet End/Polymer Chemistry	4		GEP Requirement*	3
GEP Requirement*	3			
	18			15

SENIOR YEAR

Fall Semester	Credit		Spring Semester	Credit
PSE 415 Paper Industry Strat. Proj. Analy.	3		PSE 416 Project Design and Analysis	3
PSE 417 Process Design & Analy. Lab	3		PSE 465 Paper Physics & Product Design	3
PSE 425 Bioenergy & Biomaterials Engr	3		PSE 472 Paper Process Analysis	3
PSE 475 Process Control	3		GEP Requirement*	3
GEP Requirement*	3		GEP IP Requirement*	2-3
GEP Requirement*	3			
	18			**14-15**

FIFTH YEAR

Fall Semester	Credit		Spring Semester	Credit
CHE 330 CHE Lab I	4			
CHE 446 Design & Analysis Chem Reac	3			
CHE 450 CHE Design I	3			
ECE 331 Intro Elect Circuits **or**	3			
MSE 201 Intro Material Sci Engr.				
	13			

Insert:
5 CH 103/104 may substitute for CH 101/102 and CH 203/204 may substitute for CH 201/202.

Minimum Credit Hours Required for Graduation*[I,J,K]:	144

Major/Program requirements and footnotes:

[1] Minimum grade of C- required.
[2] There is one required internship in industry. PSE 211 should be taken the first semester upon returning from that internship.
[3] Grade of C (2.0) or higher required.
4 CH 225/226 may substitute for CH 221/222, and CH 227/228 may substitute for CH 223/224.

***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.dasa.ncsu.edu/general-education-program/.

A. Mathematical Sciences (6 credit hours – one course with MA or ST prefix)
Fulfilled as part of the Major requirements.
B. Natural Sciences (7 credit hours – include one laboratory course or course with a lab)
Fulfilled as part of the Major requirements.
C. Humanities (6 credit hours selected from two different disciplines/course prefixes)
Choose from the University approved GEP Humanities course list.
D. Social Sciences (6 credit hours selected from two different disciplines/course prefixes)
Choose from the University approved GEP Social Sciences course list in a discipline other than Economics. Economics 205 (or EC 201 or ARE 201), taken as part of the Major requirements, satisfies 3 credit hours needed to fulfill the GEP Social Sciences Requirement.
E. Health & Exercise Studies (2 credit hours – at least one 100-level Fitness and Wellness Course)
Choose from the University approved GEP Health & Exercise Studies course list.
F. Additional Breadth - (3 credit hours to be selected from the following checked University approved GEP course lists)
XX Humanities/Social Sciences/Visual and Performing Arts
G. Interdisciplinary Perspectives (5-6 credit hours)
Choose from the University approved GEP Interdisciplinary Perspectives course list.
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:

I. U.S. Diversity (USD)

Choose from the University approved GEP U.S. Diversity course list or choose a course identified on the approved GEP course lists as meeting the U.S. Diversity (USD) co-requisite.

J. Global Knowledge (GK)

Choose from the University approved GEP Global Knowledge course list or choose a course identified on the approved GEP course lists as meeting the Global Knowledge (GK) co-requisite.

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

Registration and Records: Degree Requirements

Chemical Engineering(14CHEBS): 125 Total Units

Plan effective as of: Spring 2013

View Semester by Semester Plan

Freshman First (14 Units)

General Chemistry I (3 units: *C or better*)

General Chemistry I Lab (1 units: *C or better*)

E 101 - Introduction to Engineering & Problem Solving (1 units: *C- or better*)

E 115 - Introduction to Computing Environments (1 units)

MA 141 - Calculus I (4 units: *C or better*)

ENG 101 Acad Writing Research (4 units: *C- or better*)

Freshman Second (15 Units)

Quantitative Chemistry (3 units: *C- or better*)

Quantitative Chemistry Lab (1 units: ~~*C- or better*~~)

MA 241 - Calculus II (4 units: *C or better*)

PY 205 & 206 (4 units: *C or better*)

Economics (3 units)

Sophomore First (12 Units)

Organic Chemistry I (3 units: *C- or better*)

Organic Chemistry I Lab (1 units: ~~*C- or better*~~)

CHE 205 - Chemical Process Principles (4 units: *C- or better*)

MA 242 - Calculus III (4 units: *C- or better*)

General Construction Concentration
Mechanical Construction Concentration

Construction Engineering & Management (14CEMBS)

General Construction Concentration
Mechanical Construction Concentration

Electrical Engineering (14EEBS)

EE/CPE Dual Degree
Renewable Electric Energy Systems Concentration

Engineering (14EGRBS)

Mechanical Engineering Systems Concentration
Mechatronics Concentration
Mechatronics Concentration [joint degree with UNC Asheville]

Environmental Engineering (14ENEBS)

Industrial Engineering (14IEBS)

Furniture Manufacturing

Materials Science and Engineering (14MSEBS)

Biomaterials Concentration
Nanomaterials Concentration

Mechanical Engineering (14MEBS)

Nuclear Engineering (14NEBS)

Humanities & Social Sciences

Management

Natural Resources

Sciences

Sophomore Second (14 Units)

Organic Chemistry II (3 units)

Organic Chemistry II Lab (1 units)

CHE 225 - Introduction to Chemical Engineering Analysis (3 units: *C- or better*)

MA 341 - Applied Differential Equations I (3 units: *C- or better*)

PY 208 & 209 (4 units)

Junior First (14 Units)

Quantitative Analysis & Lab (4 units)

CHE 311 - Transport Processes I (3 units: *C- or better*)

CHE 315 - Chemical Process Thermodynamics (3 units: *C- or better*)

ECE 331 or MSE 201 (3 units)

CHE 395 - Professional Development Seminar (1 units)

Junior Second (14 Units)

Chemistry Elective (4 units)

CHE 312 - Transport Processes II (3 units)

CHE 316 - Thermodynamics of Chemical and Phase Equilibria (3 units)

CHE 330 - Chemical Engineering Lab I (4 units)

Senior First (11 Units)

CHE 331 - Chemical Engineering Lab II (2 units)

CHE 446 - Design and Analysis of Chemical Reactors (3 units)

CHE 450 - Chemical Engineering Design I (3 units)

Technical Elective (3 units)

Senior Second (9 Units)

CHE 435 - Process Systems Analysis and Control (3 units)

Textiles

University College

CHE 451 - Chemical Engineering Design II (3 units)

Technical Elective (3 units)

GEP Courses (19 Units)

Humanities Elective (6 units)

Social Sciences Elective (3 units)

Health & Exercise Studies (2 units) *[S Allowed]*

Additional Breadth HSS-VPA (3 units)

Interdisc Perspectives (5 units)

GEP US Diversity **[Verify Req]**

GEP Global Knowledge **[Verify Req]**

Foreign Language Proficiency **[Verify Req]**

Free Electives (3 Units)

Free Electives [12 Hr S/U Lmt] (3 units) *[S Allowed]*

Total Units: 125

ST 301: Statistical Methods I

Print to PDF

In Workflow

1. 17ST UG Director of Curriculum (muse@stat.ncsu.edu)
2. 17ST UnderGrad Head (fuentes@ncsu.edu)
3. COS CC Coordinator UG (COS CC Coordinator UG@ncsu.edu)
4. COS CC Meeting UG (clbowma2@ncsu.edu; James_brown@ncsu.edu)
5. COS CC Chair UG (james_brown@ncsu.edu)
6. COS Dean UG (cohen@math.ncsu.edu)
7. OUCC Review (lamarcus@ncsu.edu)
8. UCCC Coordinator (lamarcus@ncsu.edu)
9. UCCC Meeting (lamarcus@ncsu.edu)
10. UCCC Chair (despain@ncsu.edu)
11. OUCC Final Signature (barbara_kirby@ncsu.edu)
12. OUCC Final Review (lamarcus@ncsu.edu)
13. PeopleSoft (ldmihalo@ncsu.edu; blpearso@ncsu.edu; Charles_Clift@ncsu.edu; jmharr19@ncsu.edu; Tracey_Ennis@ncsu.edu)

Approval Path

1. Tue, 01 Mar 2016 17:54:55 GMT
   Spencer Muse (muse): Approved for 17ST UG Director of Curriculum
2. Tue, 01 Mar 2016 20:09:22 GMT
   Montserrat Fuentes (fuentes): Approved for 17ST UnderGrad Head
3. Tue, 01 Mar 2016 21:32:37 GMT
   Cheryll Bowman-Medhin (clbowma2): Approved for COS CC Coordinator UG
4. Thu, 03 Mar 2016 13:42:32 GMT
   Cheryll Bowman-Medhin (clbowma2): Approved for COS CC Meeting UG
5. Tue, 29 Mar 2016 22:01:22 GMT
   James Brown (James_brown): Approved for COS CC Chair UG
6. Tue, 29 Mar 2016 22:05:45 GMT
   Jo-Ann Cohen (cohen): Approved for COS Dean UG

Course Drop Proposal

Date Submitted: Mon, 07 Dec 2015 21:08:10 GMT

Viewing: ST 301 : Statistical Methods I

Changes proposed by: muse

Change Type

Course Prefix

ST (Statistics)

Course Number

301

Course ID

020190

Dual-Level Course

No

Dual-Level Course Number:

Cross-listed Course

No

Cross-listed with Subject Code(s)

Title

Statistical Methods I

Abbreviated Title

Statis Methods I

College

College of Sciences

Academic Org Code

Statistics (17ST)

CIP Discipline Specialty Number

27.0501

CIP Discipline Specialty Title

Statistics, General.

Term Offering

Year Offering

Specify:

Effective Date

Spring 2016

Previously taught as Special Topics?

No

Number of Offerings within the past 5 years

Course Delivery

Remote Location/Site

Grading Method

Graded with S/U option

Credit Hours

3

Course Length

weeks

Contact Hours
(Per Week)

Component Type	Contact Hours
Lecture	3.0

Course Attribute(s)

Please explain why you selected Service Learning:

If your course includes any of the following competencies, check all that apply.

University Competencies

Course Is Repeatable for Credit

No

Total number of completions allowed including the initial offering.

Maximum total credit hours allowed

Instructor Name

Instructor Title

Grad Faculty Status

Anticipated On-Campus Enrollment

Open when course_delivery = campus OR course_delivery = blended OR course_delivery = flip

DELTA/Online Enrollment:

Open when course_delivery = distance OR course_delivery = online OR course_delivery = remote

Course Prerequisites, Corequisites, and Restrictive Statement

Prerequisite: MA 141 and either COS 100 or E 115

Is the course required or an elective for a Curriculum?

No

Which Curricula are Affected?

Catalog Description

Contemporary description and analysis of single samples of data. Graphical data presentation methods for determination of patterns and relationships among variables. Classical and robust alternative methods for single sample data summary procedures.Probability concepts, sampling, and expectations. Confidence interval and hypothesis testing for sample mean and proportion. Computer use emphasized.

Justification for each revision:

Does this course have a fee?

No

List amount and justification for fee:

Is this a GEP Course?

No

GEP Categories

Humanities Open when gep_category = HUM
Each course in the Humanities category of the General Education Program will provide instruction and guidance that help students to:

List the Instructor's student learning outcomes that are relevant to the GEP Humanities Objective 1:
Obj. 1) Engage the human experience through the interpretation of culture.

Measure(s) for the above outcome(s): *Describe the assessments that will be used to determine if students have achieved the outcome. Including a relevant example assignment/question/prompt is encouraged for clarity.*

List the Instructor's student learning outcomes that are relevant to the GEP Humanities Objective 2:
Obj. 2): Become aware of the act of interpretation itself as a critical form of knowing in the humanities.

Measure(s) for the above outcome(s): *Describe the assessments that will be used to determine if students have achieved the outcome. Including a relevant example assignment/question/prompt is encouraged for clarity.*

List the Instructor's student learning outcomes that are relevant to the GEP Humanities Objective 3:
Obj. 3) Make academic arguments about the human experience using reasons and evidence for supporting those reasons that are appropriate to the humanities.

Measure(s) for the above outcome(s): *Describe the assessments that will be used to determine if students have achieved the outcome. Including a relevant example assignment/question/prompt is encouraged for clarity.*

Attach Additional GEP Information if applicable

Mathematical Sciences Open when gep_category = MATH
Each course in the Mathematial Sciences category of the General Education Program will provide instruction and guidance that help students to:

List the Instructor's student learning outcomes that are relevant to the GEP Mathematical Sciences Objective 1:
Obj. 1) Improve and refine mathematical problem-solving abilities.

Measure(s) for the above outcome(s): *Describe the assessments that will be used to determine if students have achieved the outcome. Including a relevant example assignment/question/prompt is encouraged for clarity.*

List the Instructor's student learning outcomes that are relevant to the GEP Mathematical Sciences Objective 2:
Obj. 2) Develop logical reasoning skills.

Measure(s) for the above outcome(s): *Describe the assessments that will be used to determine if students have achieved the outcome. Including a relevant example assignment/question/prompt is encouraged for clarity.*

Attach Additional GEP Information if applicable

Natural Sciences Open when gep_category = NATSCI
Each course in the Natural Sciences category of the General Education Program will provide instruction and guidance that help students to:

List the Instructor's student learning outcomes that are relevant to the GEP Natural Sciences Objective 1:
Obj.O 1) Use the methods and processes of science in testing hypotheses, solving problems and making decisions

Measure(s) for the above outcome(s): *Describe the assessments that will be used to determine if students have achieved the outcome. Including a relevant example assignment/question/prompt is encouraged for clarity.*

List the Instructor's student learning outcomes that are relevant to the GEP Natural Sciences Objective 2:
Obj. 2) Make inferences from and articulate, scientific concepts, principles, laws, and theories, and apply this knowledge to problem solving.

Measure(s) for the above outcome(s): *Describe the assessments that will be used to determine if students have achieved the outcome. Including a relevant example assignment/question/prompt is encouraged for clarity.*

Attach Additional GEP Information if applicable

Social Sciences Open when gep_category = SOCSCI
Each course in the Social Sciences category of the General Education Program will provide instruction and guidance that help students to:

List the Instructor's student learning outcomes that are relevant to the GEP Social Sciences Objective 1:
Obj. 1) Examine at least one of the following: human behavior, culture, mental processes, organizational processes, or institutional processes.

Measure(s) for the above outcome(s): *Describe the assessments that will be used to determine if students have achieved the outcome. Including a relevant example assignment/question/prompt is encouraged for clarity.*

List the Instructor's student learning outcomes that are relevant to the GEP Social Sciences Objective 2:
Obj. 2) Demonstrate how social scientific methods may be applied to the study of human behavior, culture, mental processes, organizational processes, or institutional processes.

Measure(s) for the above outcome(s): *Describe the assessments that will be used to determine if students have achieved the outcome. Including a relevant example assignment/question/prompt is encouraged for clarity.*

List the Instructor's student learning outcomes that are relevant to the GEP Social Sciences Objective 3:
Obj. 3) Use theories or concepts of the social sciences to analyze and explain theoretical and or real-world problems, including the underlying origins of such problems.

Measure(s) for the above outcome(s): *Describe the assessments that will be used to determine if students have achieved the outcome. Including a relevant example assignment/question/prompt is encouraged for clarity.*

Attach Additional GEP Information if applicable

Interdisciplinary Perspectives Open when gep_category = INTERDISC
Each course in the Interdisciplinary Perspectives category of the General Education Program will provide instruction and guidance that help students to:

List the Instructor's student learning outcomes that are relevant to the GEP Interdisciplinary Objective 1:
Obj. 1) Distinguish between the distinct approaches of two or more disciplines.

Measure(s) for the above outcome(s): *Describe the assessments that will be used to determine if students have achieved the outcome. Including a relevant example assignment/question/prompt is encouraged for clarity.*

List the Instructor's student learning outcomes that are relevant to the GEP Interdisciplinary Objective 2:
Obj. 2) Identify and apply authentic connections between two or more disciplines.

Measure(s) for the above outcome(s): *Describe the assessments that will be used to determine if students have achieved the outcome. Including a relevant example assignment/question/prompt is encouraged for clarity.*

List the Instructor's student learning outcomes that are relevant to the GEP Interdisciplinary Objective 3:
Obj. 3) Explore and synthesize the approaches or views of two or more disciplines.

Measure(s) for the above outcome(s): *Describe the assessments that will be used to determine if students have achieved the outcome. Including a relevant example assignment/question/prompt is encouraged for clarity.*

To assist CUE in evaluating this course for inclusion on the Interdisciplinary Perspecitves list, please answer these additional questions.

1. Which disciplines will be synthesized, connected, and/or considered in this course?

2. How will the instructor present the material so that these disciplines are addressed in a way that allows the students "to integrate the multiple points of view into a cohesive understanding"?

Attach Additional GEP Information if applicable

Visual & Performing Arts Open when gep_category = VPA
Each course in the Visual and Performing Arts category of the General Education Program will provide instruction and guidance that help students to:

List the Instructor's student learning outcomes that are relevant to the GEP Visual & Performing Arts Objective 1:
Obj. 1) Deepen their understanding of aesthetic, cultural, and historical dimensions of artistic traditions.

Measure(s) for the above outcome(s): *Describe the assessments that will be used to determine if students have achieved the outcome. Including a relevant example assignment/question/prompt is encouraged for clarity.*

List the Instructor's student learning outcomes that are relevant to the GEP Visual & Performing Arts Objective 2:
Obj. 2) Strengthen their ability to interpret and make critical judgements about the arts through the analysis of structure, form, and style of specific works.

Measure(s) for the above outcome(s): *Describe the assessments that will be used to determine if students have achieved the outcome. Including a relevant example assignment/question/prompt is encouraged for clarity.*

List the Instructor's student learning outcomes that are relevant to the GEP Visual & Performing Arts Objective 3:
Obj. 3) Strengthen their ability to create, recreate, or evaluate art based upon techniques and standards appropriate to the genre.

Measure(s) for the above outcome(s): *Describe the assessments that will be used to determine if students have achieved the outcome. Including a relevant example assignment/question/prompt is encouraged for clarity.*

Attach Additional GEP Information if applicable

Health and Exercise Studies Open when gep_category = HES
Each course in the Health and Exercise Studies category of the General Education Program will provide instruction and guidance that help students to:

List the Instructor's student learning outcomes that are relevant to the GEP Health & Exercise Studies Objective 1:
Obj. 1) Acquire the fundamentals of health-related fitness, encompassing cardio-respiratory and cardiovascular endurance, muscular strength and endurance, muscular flexibility and body composition.

Measure(s) for the above outcome(s): *Describe the assessments that will be used to determine if students have achieved the outcome. Including a relevant example assignment/question/prompt is encouraged for clarity.*

List the Instructor's student learning outcomes that are relevant to the GEP Health & Exercise Studies Objective 2:
Obj. 2) Apply knowledge of the fundamentals of health-related fitness toward developing, maintaining, and sustaining an active and healthy lifestyle.

Measure(s) for the above outcome(s): *Describe the assessments that will be used to determine if students have achieved the outcome. Including a relevant example assignment/question/prompt is encouraged for clarity.*

List the Instructor's student learning outcomes that are relevant to the GEP Health & Exercise Studies Objective 3:
Obj. 3) Acquire or enhance the basic motor skills and skill-related competencies, concepts, and strategies used in physical activities and sport.

&

Measure(s) for the above outcome(s): *Describe the assessments that will be used to determine if students have achieved the outcome. Including a relevant example assignment/question/prompt is encouraged for clarity.*

List the Instructor's student learning outcomes that are relevant to the GEP Health & Exercise Studies Objective 4:
Obj. 4) Gain a thorough working knowledge, appreciation, and understanding of the spirit and rules, history, safety, and etiquette of physical activities and sport.

Measure(s) for the above outcome(s): *Describe the assessments that will be used to determine if students have achieved the outcome. Including a relevant example assignment/question/prompt is encouraged for clarity.*

Attach Additional GEP Information if applicable

Global Knowledge Open when gep_category = GLOBAL
Each course in the Global Knowledge category of the General Education Program will provide instruction and guidance that help students to achieve objective #1 plus at least one of objectives 2, 3, and 4:

List the Instructor's student learning outcomes that are relevant to the GEP Global Knowledge Objective 1:
Obj. 1) Identify and examine distinguishing characteristics, including ideas, values, images, cultural artifacts, economic structures, technological or scientific developments, and/or attitudes of people in a society or culture outside the United States.

Measure(s) for the above outcome(s): *Describe the assessments that will be used to determine if students have achieved the outcome. Including a relevant example assignment/question/prompt is encouraged for clarity.*

Please complete at least 1 of the following student objectives.
List the Instructor's student learning outcomes that are relevant to the GEP Global Knowledge Objective 2:
Obj. 2) Compare these distinguishing characteristics between the non-U.S. society and at least one other society.

Measure(s) for the above outcome(s): *Describe the assessments that will be used to determine if students have achieved the outcome. Including a relevant example assignment/question/prompt is encouraged for clarity.*

List the Instructor's student learning outcomes that are relevant to the GEP Global Knowledge Objective 3:
Obj. 3) Explain how these distinguishing characteristics relate to their cultural and/or historical contexts in the non-U.S. society.

Measure(s) for the above outcome(s): *Describe the assessments that will be used to determine if students have achieved the outcome. Including a relevant example assignment/question/prompt is encouraged for clarity.*

List the Instructor's student learning outcomes that are relevant to the GEP Global Knowledge Objective 4:
Obj. 4) Explain how these disinguishing characteristics change in response to internal and external pressures on the non-U.S. society.

Measure(s) for the above outcome(s): *Describe the assessments that will be used to determine if students have achieved the outcome. Including a relevant example assignment/question/prompt is encouraged for clarity.*

Attach Additional GEP Information if applicable

US Diversity Open when gep_category = USDIV
Each course in the US Diversity category of the General Education Program will provide instruction and guidance that help students to achieve at least 2 of the following objectives:
Please complete at least 2 of the following student objectives.

List the Instructor's student learning outcomes that are relevant to the GEP U.S. Diversity Objective 1:
Obj. 1) Analyze how religious, gender, ethnic, racial, class, sexual orientation, disability, and/or age identities are shaped by cultural and societal influences.

Measure(s) for the above outcome(s): *Describe the assessments that will be used to determine if students have achieved the outcome. Including a relevant example assignment/question/prompt is encouraged for clarity.*

List the Instructor's student learning outcomes that are relevant to the GEP U.S. Diversity Objective 2:
Obj. 2) Categorize and compare historical, social, political, and/or economic processes producing diversity, equality, and structured inequalities in the U.S.

Measure(s) for the above outcome(s): *Describe the assessments that will be used to determine if students have achieved the outcome. Including a relevant example assignment/question/prompt is encouraged for clarity.*

List the Instructor's student learning outcomes that are relevant to the GEP U.S. Diversity Objective 3:
Obj. 3) Interpret and evaluate social actions by religious, gender, ethnic, racial, class, sexual orientation, disability, and/or age groups affecting equality and social justice in the U.S.

Measure(s) for the above outcome(s): *Describe the assessments that will be used to determine if students have achieved the outcome. Including a relevant example assignment/question/prompt is encouraged for clarity.*

List the Instructor's student learning outcomes that are relevant to the GEP U.S. Diversity Objective 4:
Obj. 4) Examine interactions between people from different religious, gender, ethnic, racial, class, sexual orientation, disability, and/or age groups in the U.S.

Measure(s) for the above outcome(s): *Describe the assessments that will be used to determine if students have achieved the outcome. Including a relevant example assignment/question/prompt is encouraged for clarity.*

Attach Additional GEP Information if applicable

Requisites and Scheduling
What percentage of the seats offered will be open to all students?

a. If seats are restricted, describe the restrictions being applied.

b. Is this restriction listed in the course catalog description for the course?

List all course pre-requisites, co-requisites, and restrictive statements (ex: Jr standing; Chemistry majors only). If none, state none.

List any discipline specific background or skills that a student is expected to have prior to taking this course. If none, state none. (ex: ability to analyze historical text; prepare a lesson plan)

Additional Information
Complete the following 3 questions or attach a syllabus that includes this information. If a 400-level or dual level course, a syllabus is required.

Title and author of any required text or publications.

Major topics to be covered and required readings including laboratory and studio topics.

List any required field trips, out of class activities, and/or guest speakers.

Consultation

Instructional Resources Statement

Course Objectives/Goals

Student Learning Outcomes

Student Evaluation Methods

Topical Outline/Course Schedule

Syllabus

Additional Documentation

Additional Comments

Justification for this request

The ST 30-1/302 series has not been taught in the past 7 years, with no plans to revive them.

Course Reviewer Comments

Key: 5081

Preview Bridge

ST 302: Statistical Methods II

Print to PDF

In Workflow

1. 17ST UG Director of Curriculum (muse@stat.ncsu.edu)
2. 17ST UnderGrad Head (fuentes@ncsu.edu)
3. COS CC Coordinator UG (COS CC Coordinator UG@ncsu.edu)
4. COS CC Meeting UG (clbowma2@ncsu.edu; James_brown@ncsu.edu)
5. COS CC Chair UG (james_brown@ncsu.edu)
6. COS Dean UG (cohen@math.ncsu.edu)
7. OUCC Review (lamarcus@ncsu.edu)
8. UCCC Coordinator (lamarcus@ncsu.edu)
9. UCCC Meeting (lamarcus@ncsu.edu)
10. UCCC Chair (despain@ncsu.edu)
11. OUCC Final Signature (barbara_kirby@ncsu.edu)
12. OUCC Final Review (lamarcus@ncsu.edu)
13. PeopleSoft (ldmihalo@ncsu.edu; blpearso@ncsu.edu; Charles_Clift@ncsu.edu; jmharr19@ncsu.edu; Tracey_Ennis@ncsu.edu)

Approval Path

1. Tue, 01 Mar 2016 17:55:38 GMT
   Spencer Muse (muse): Approved for 17ST UG Director of Curriculum
2. Tue, 01 Mar 2016 20:09:28 GMT
   Montserrat Fuentes (fuentes): Approved for 17ST UnderGrad Head
3. Tue, 01 Mar 2016 21:33:06 GMT
   Cheryll Bowman-Medhin (clbowma2): Approved for COS CC Coordinator UG
4. Thu, 03 Mar 2016 13:42:35 GMT
   Cheryll Bowman-Medhin (clbowma2): Approved for COS CC Meeting UG
5. Tue, 29 Mar 2016 22:01:28 GMT
   James Brown (James_brown): Approved for COS CC Chair UG
6. Tue, 29 Mar 2016 22:06:08 GMT
   Jo-Ann Cohen (cohen): Approved for COS Dean UG

Course Drop Proposal

Date Submitted: Mon, 07 Dec 2015 21:09:06 GMT

Viewing: ST 302 : Statistical Methods II

Changes proposed by: muse

Change Type

Course Prefix

ST (Statistics)

Course Number

302

Course ID

020193

Dual-Level Course

No

Dual-Level Course Number:

Cross-listed Course

No

Cross-listed with Subject Code(s)

Title

Statistical Methods II

Abbreviated Title

Statis Methods II

College

College of Sciences

Academic Org Code

Statistics (17ST)

CIP Discipline Specialty Number

27.0501

CIP Discipline Specialty Title

Statistics, General.

Term Offering

Year Offering

Specify:

Effective Date

Spring 2016

Previously taught as Special Topics?

No

Number of Offerings within the past 5 years

Course Delivery

Remote Location/Site

Grading Method

Graded with S/U option

Credit Hours

3

Course Length

weeks

Contact Hours
(Per Week)

Component Type	Contact Hours
Laboratory	1.0

Lecture	3.0

Course Attribute(s)

Please explain why you selected Service Learning:

If your course includes any of the following competencies, check all that apply.

University Competencies

Course Is Repeatable for Credit

No

Total number of completions allowed including the initial offering.

Maximum total credit hours allowed

Instructor Name

Instructor Title

Grad Faculty Status

Anticipated On-Campus Enrollment

Open when course_delivery = campus OR course_delivery = blended OR course_delivery = flip

DELTA/Online Enrollment:

Open when course_delivery = distance OR course_delivery = online OR course_delivery = remote

Course Prerequisites, Corequisites, and Restrictive Statement

Prerequisite: ST 301

Is the course required or an elective for a Curriculum?

No

Which Curricula are Affected?

Catalog Description

Confidence intervals and hypothesis testing with graphics in multiple samples and/or variables cases: tests for means/proportions of two independent groups, analysis of variance for completely randomized design, contingency table analysis, correlation, single and multiple linear regression; design of experiments with randomized blocks, factorial design and analysis of covariance. Computer use emphasized.

Justification for each revision:

Does this course have a fee?

No

List amount and justification for fee:

Is this a GEP Course?

No

GEP Categories

Humanities Open when gep_category = HUM
Each course in the Humanities category of the General Education Program will provide instruction and guidance that help students to:

List the Instructor's student learning outcomes that are relevant to the GEP Humanities Objective 1:
Obj. 1) Engage the human experience through the interpretation of culture.

Measure(s) for the above outcome(s): *Describe the assessments that will be used to determine if students have achieved the outcome. Including a relevant example assignment/question/prompt is encouraged for clarity.*

List the Instructor's student learning outcomes that are relevant to the GEP Humanities Objective 2:
Obj. 2): Become aware of the act of interpretation itself as a critical form of knowing in the humanities.

Measure(s) for the above outcome(s): *Describe the assessments that will be used to determine if students have achieved the outcome. Including a relevant example assignment/question/prompt is encouraged for clarity.*

List the Instructor's student learning outcomes that are relevant to the GEP Humanities Objective 3:
Obj. 3) Make academic arguments about the human experience using reasons and evidence for supporting those reasons that are appropriate to the humanities.

Measure(s) for the above outcome(s): *Describe the assessments that will be used to determine if students have achieved the outcome. Including a relevant example assignment/question/prompt is encouraged for clarity.*

Attach Additional GEP Information if applicable

Mathematical Sciences Open when gep_category = MATH
Each course in the Mathematial Sciences category of the General Education Program will provide instruction and guidance that help students to:

List the Instructor's student learning outcomes that are relevant to the GEP Mathematical Sciences Objective 1:
Obj. 1) Improve and refine mathematical problem-solving abilities.

Measure(s) for the above outcome(s): *Describe the assessments that will be used to determine if students have achieved the outcome. Including a relevant example assignment/question/prompt is encouraged for clarity.*

List the Instructor's student learning outcomes that are relevant to the GEP Mathematical Sciences Objective 2:
Obj. 2) Develop logical reasoning skills.

Measure(s) for the above outcome(s): *Describe the assessments that will be used to determine if students have achieved the outcome. Including a relevant example assignment/question/prompt is encouraged for clarity.*

Attach Additional GEP Information if applicable

Natural Sciences Open when gep_category = NATSCI
Each course in the Natural Sciences category of the General Education Program will provide instruction and guidance that help students to:

List the Instructor's student learning outcomes that are relevant to the GEP Natural Sciences Objective 1:
Obj.O 1) Use the methods and processes of science in testing hypotheses, solving problems and making decisions

Measure(s) for the above outcome(s): *Describe the assessments that will be used to determine if students have achieved the outcome. Including a relevant example assignment/question/prompt is encouraged for clarity.*

List the Instructor's student learning outcomes that are relevant to the GEP Natural Sciences Objective 2:
Obj. 2) Make inferences from and articulate, scientific concepts, principles, laws, and theories, and apply this knowledge to problem solving.

Measure(s) for the above outcome(s): *Describe the assessments that will be used to determine if students have achieved the outcome. Including a relevant example assignment/question/prompt is encouraged for clarity.*

Attach Additional GEP Information if applicable

Social Sciences Open when gep_category = SOCSCI
Each course in the Social Sciences category of the General Education Program will provide instruction and guidance that help students to:

List the Instructor's student learning outcomes that are relevant to the GEP Social Sciences Objective 1:
Obj. 1) Examine at least one of the following: human behavior, culture, mental processes, organizational processes, or institutional processes.

Measure(s) for the above outcome(s): *Describe the assessments that will be used to determine if students have achieved the outcome. Including a relevant example assignment/question/prompt is encouraged for clarity.*

List the Instructor's student learning outcomes that are relevant to the GEP Social Sciences Objective 2:
Obj. 2) Demonstrate how social scientific methods may be applied to the study of human behavior, culture, mental processes, organizational processes, or institutional processes.

Measure(s) for the above outcome(s): *Describe the assessments that will be used to determine if students have achieved the outcome. Including a relevant example assignment/question/prompt is encouraged for clarity.*

List the Instructor's student learning outcomes that are relevant to the GEP Social Sciences Objective 3:
Obj. 3) Use theories or concepts of the social sciences to analyze and explain theoretical and or real-world problems, including the underlying origins of such problems.

Measure(s) for the above outcome(s): *Describe the assessments that will be used to determine if students have achieved the outcome. Including a relevant example assignment/question/prompt is encouraged for clarity.*

Attach Additional GEP Information if applicable

Interdisciplinary Perspectives Open when gep_category = INTERDISC
Each course in the Interdisciplinary Perspectives category of the General Education Program will provide instruction and guidance that help students to:

List the Instructor's student learning outcomes that are relevant to the GEP Interdisciplinary Objective 1:
Obj. 1) Distinguish between the distinct approaches of two or more disciplines.

Measure(s) for the above outcome(s): *Describe the assessments that will be used to determine if students have achieved the outcome. Including a relevant example assignment/question/prompt is encouraged for clarity.*

List the Instructor's student learning outcomes that are relevant to the GEP Interdisciplinary Objective 2:
Obj. 2) Identify and apply authentic connections between two or more disciplines.

Measure(s) for the above outcome(s): *Describe the assessments that will be used to determine if students have achieved the outcome. Including a relevant example assignment/question/prompt is encouraged for clarity.*

List the Instructor's student learning outcomes that are relevant to the GEP Interdisciplinary Objective 3:
Obj. 3) Explore and synthesize the approaches or views of two or more disciplines.

Measure(s) for the above outcome(s): *Describe the assessments that will be used to determine if students have achieved the outcome. Including a relevant example assignment/question/prompt is encouraged for clarity.*

To assist CUE in evaluating this course for inclusion on the Interdisciplinary Perspecitves list, please answer these additional questions.
1. Which disciplines will be synthesized, connected, and/or considered in this course?

2. How will the instructor present the material so that these disciplines are addressed in a way that allows the students "to integrate the multiple points of view into a cohesive understanding"?

Attach Additional GEP Information if applicable

Visual & Performing Arts Open when gep_category = VPA
Each course in the Visual and Performing Arts category of the General Education Program will provide instruction and guidance that help students to:

List the Instructor's student learning outcomes that are relevant to the GEP Visual & Performing Arts Objective 1:
Obj. 1) Deepen their understanding of aesthetic, cultural, and historical dimensions of artistic traditions.

Measure(s) for the above outcome(s): *Describe the assessments that will be used to determine if students have achieved the outcome. Including a relevant example assignment/question/prompt is encouraged for clarity.*

List the Instructor's student learning outcomes that are relevant to the GEP Visual & Performing Arts Objective 2:
Obj. 2) Strengthen their ability to interpret and make critical judgements about the arts through the analysis of structure, form, and style of specific works.

Measure(s) for the above outcome(s): *Describe the assessments that will be used to determine if students have achieved the outcome. Including a relevant example assignment/question/prompt is encouraged for clarity.*

List the Instructor's student learning outcomes that are relevant to the GEP Visual & Performing Arts Objective 3:
Obj. 3) Strengthen their ability to create, recreate, or evaluate art based upon techniques and standards appropriate to the genre.

Measure(s) for the above outcome(s): *Describe the assessments that will be used to determine if students have achieved the outcome. Including a relevant example assignment/question/prompt is encouraged for clarity.*

Attach Additional GEP Information if applicable

Health and Exercise Studies Open when gep_category = HES
Each course in the Health and Exercise Studies category of the General Education Program will provide instruction and guidance that help students to:

List the Instructor's student learning outcomes that are relevant to the GEP Health & Exercise Studies Objective 1:
Obj. 1) Acquire the fundamentals of health-related fitness, encompassing cardio-respiratory and cardiovascular endurance, muscular strength and endurance, muscular flexibility and body composition.

Measure(s) for the above outcome(s): *Describe the assessments that will be used to determine if students have achieved the outcome. Including a relevant example assignment/question/prompt is encouraged for clarity.*

List the Instructor's student learning outcomes that are relevant to the GEP Health & Exercise Studies Objective 2:
Obj. 2) Apply knowledge of the fundamentals of health-related fitness toward developing, maintaining, and sustaining an active and healthy lifestyle.

Measure(s) for the above outcome(s): *Describe the assessments that will be used to determine if students have achieved the outcome. Including a relevant example assignment/question/prompt is encouraged for clarity.*

List the Instructor's student learning outcomes that are relevant to the GEP Health & Exercise Studies Objective 3:
Obj. 3) Acquire or enhance the basic motor skills and skill-related competencies, concepts, and strategies used in physical activities and sport.

&

Measure(s) for the above outcome(s): *Describe the assessments that will be used to determine if students have achieved the outcome. Including a relevant example assignment/question/prompt is encouraged for clarity.*

List the Instructor's student learning outcomes that are relevant to the GEP Health & Exercise Studies Objective 4:
Obj. 4) Gain a thorough working knowledge, appreciation, and understanding of the spirit and rules, history, safety, and etiquette of physical activities and sport.

Measure(s) for the above outcome(s): *Describe the assessments that will be used to determine if students have achieved the outcome. Including a relevant example assignment/question/prompt is encouraged for clarity.*

Attach Additional GEP Information if applicable

Global Knowledge Open when gep_category = GLOBAL
Each course in the Global Knowledge category of the General Education Program will provide instruction and guidance that help students to achieve objective #1 plus at least one of objectives 2, 3, and 4:

List the Instructor's student learning outcomes that are relevant to the GEP Global Knowledge Objective 1:
Obj. 1) Identify and examine distinguishing characteristics, including ideas, values, images, cultural artifacts, economic structures, technological or scientific developments, and/or attitudes of people in a society or culture outside the United States.

Measure(s) for the above outcome(s): *Describe the assessments that will be used to determine if students have achieved the outcome. Including a relevant example assignment/question/prompt is encouraged for clarity.*

Please complete at least 1 of the following student objectives.
List the Instructor's student learning outcomes that are relevant to the GEP Global Knowledge Objective 2:
Obj. 2) Compare these distinguishing characteristics between the non-U.S. society and at least one other society.

Measure(s) for the above outcome(s): *Describe the assessments that will be used to determine if students have achieved the outcome. Including a relevant example assignment/question/prompt is encouraged for clarity.*

List the Instructor's student learning outcomes that are relevant to the GEP Global Knowledge Objective 3:
Obj. 3) Explain how these distinguishing characteristics relate to their cultural and/or historical contexts in the non-U.S. society.

Measure(s) for the above outcome(s): *Describe the assessments that will be used to determine if students have achieved the outcome. Including a relevant example assignment/question/prompt is encouraged for clarity.*

List the Instructor's student learning outcomes that are relevant to the GEP Global Knowledge Objective 4:
Obj. 4) Explain how these disinguishing characteristics change in response to internal and external pressures on the non-U.S. society.

Measure(s) for the above outcome(s): *Describe the assessments that will be used to determine if students have achieved the outcome. Including a relevant example assignment/question/prompt is encouraged for clarity.*

Attach Additional GEP Information if applicable

US Diversity Open when gep_category = USDIV
Each course in the US Diversity category of the General Education Program will provide instruction and guidance that help students to achieve at least 2 of the following objectives:
Please complete at least 2 of the following student objectives.

List the Instructor's student learning outcomes that are relevant to the GEP U.S. Diversity Objective 1:
Obj. 1) Analyze how religious, gender, ethnic, racial, class, sexual orientation, disability, and/or age identities are shaped by cultural and societal influences.

Measure(s) for the above outcome(s): *Describe the assessments that will be used to determine if students have achieved the outcome. Including a relevant example assignment/question/prompt is encouraged for clarity.*

List the Instructor's student learning outcomes that are relevant to the GEP U.S. Diversity Objective 2:
Obj. 2) Categorize and compare historical, social, political, and/or economic processes producing diversity, equality, and structured inequalities in the U.S.

Measure(s) for the above outcome(s): *Describe the assessments that will be used to determine if students have achieved the outcome. Including a relevant example assignment/question/prompt is encouraged for clarity.*

List the Instructor's student learning outcomes that are relevant to the GEP U.S. Diversity Objective 3:
Obj. 3) Interpret and evaluate social actions by religious, gender, ethnic, racial, class, sexual orientation, disability, and/or age groups affecting equality and social justice in the U.S.

Measure(s) for the above outcome(s): *Describe the assessments that will be used to determine if students have achieved the outcome. Including a relevant example assignment/question/prompt is encouraged for clarity.*

List the Instructor's student learning outcomes that are relevant to the GEP U.S. Diversity Objective 4:
Obj. 4) Examine interactions between people from different religious, gender, ethnic, racial, class, sexual orientation, disability, and/or age groups in the U.S.

Measure(s) for the above outcome(s): *Describe the assessments that will be used to determine if students have achieved the outcome. Including a relevant example assignment/question/prompt is encouraged for clarity.*

Attach Additional GEP Information if applicable

Requisites and Scheduling
What percentage of the seats offered will be open to all students?

a. If seats are restricted, describe the restrictions being applied.

b. Is this restriction listed in the course catalog description for the course?

List all course pre-requisites, co-requisites, and restrictive statements (ex: Jr standing; Chemistry majors only). If none, state none.

List any discipline specific background or skills that a student is expected to have prior to taking this course. If none, state none. (ex: ability to analyze historical text; prepare a lesson plan)

Additional Information
Complete the following 3 questions or attach a syllabus that includes this information. If a 400-level or dual level course, a syllabus is required.

Title and author of any required text or publications.

Major topics to be covered and required readings including laboratory and studio topics.

List any required field trips, out of class activities, and/or guest speakers.

Consultation

Instructional Resources Statement

Course Objectives/Goals

Student Learning Outcomes

Student Evaluation Methods

Topical Outline/Course Schedule

Syllabus

Additional Documentation

Additional Comments

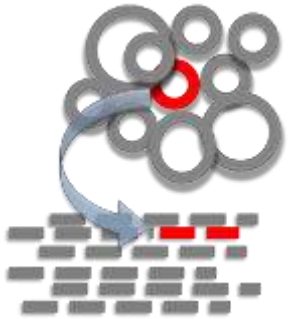
Justification for this request

The ST 301/302 series has not been taught in the past 7 years, with no plans to revive them.

Course Reviewer Comments

Key: 5082

Preview Bridge



Course Syllabus BIT 477/577:

Metagenomics

Spring 2016 Session 1 | 2 Credit hours
Biotechnology Program | North Carolina State University

Instructor: **Dr. Carlos C. Goller**
E-mail: ccgoller@ncsu.edu
Phone: (919) 513-4135
Office hours: 6102 Jordan Hall by appointment

Course Prerequisites: *BIT410: Manipulation of Recombinant DNA*. Microbiology and biochemistry recommended.

Dates:	January 6th, 2016 – February 26th, 2016		
Times:	Lectures	Thursdays 3:00-4:50 pm	6117 Jordan Hall
	Laboratory	Tuesdays 12:50-5:50 pm	6136 Jordan Hall

Teaching Assistant: **Nicholas Givens**
Email: **nagivens@ncsu.edu**

Course Description: Participants will be introduced to a variety of methods for studying the complex microbial populations that surround us, including theory, applications, limitations, and health and legal implications. Students will apply deep sequencing techniques to mine the genetic diversity of complex microbial populations such as the rhizosphere, a swine lagoon sample, or even the communities of microbes growing happily inside your kitchen sink drain. This course will provide hands-on experience with molecular and computational tools that can be used to study the relationships between microbial communities and ecosystems or hosts.

Course Goals: Upon completion of the course, participants will be able to:

- **Demonstrate** laboratory skills required of a modern-day molecular biologist in the era of next generation sequencing. This includes keeping detailed and accurate laboratory notes (*e.g.*, electronic records for sequence analyses) and choosing and using an appropriate sequence analysis tool.
- **Design** and **troubleshoot** metagenomics experiments.
- **Prepare** genomic DNA for deep sequencing and metagenomic analyses.
- **Identify** and **analyze** the function of sequences with potential industrial applications or public health implications from a complex sample or metagenomic dataset.
- **Interpret** data and **identify** limitations related to metagenomic surveys.

Specific Learning Outcomes:

- Given a complex genomic DNA sample, the participant will be able to **list** the steps for creating an amplicon library (*e.g.*, 16S), sequencing the sample, pre-processing the reads, and inferring taxonomic representation.
- Given a formatted metagenomics dataset and access to online databases/portals and software, the participant will be able to **apply** appropriate bioinformatics gene prediction and annotation tools.
- Given a formatted dataset and an appropriate visualization tool, the participant will be able to accurately **summarize** the output for different measures of diversity.
- Given a specific source of DNA, the participant will be able to **design** an appropriate experiment to obtain metagenomic data from a sample for experiments involving extraction of environmental DNA.

Specific Learning Outcome for BIT577 (Graduate) Students:

- Given workflows followed during the course, the participant will be able to **design** future experiments and analyses for hypothesis testing of metagenomic data.

Course Structure and Meetings: Eight-week laboratory-intensive course with complementary lectures covering aspects of metagenomics, molecular epidemiology (using next generation sequencing), environmental microbiology, bioinformatics, bioethics, and novel techniques for sequencing and analyzing complex samples. The laboratory project will seek to better understand and appreciate the relationships between microbial communities and their environment, with a focus on the *stability* of microbial populations in different environments (the built environment of a kitchen sink or a warming chamber in Duke Forest).

Website*:* The class website is on Moodle (https://wolfware.ncsu.edu/login/) listed under *BIT477/577: Metagenomics | Fall 2015*. Use your Unity ID and password to log in. The website is the **primary way** I will be in contact with you; therefore, it is **your** responsibility to **make sure you have access to your email and check it regularly.** If you are having problems accessing your Moodle account or email, contact the Help Desk directly at (919) 515-4357, by email help@ncsu.edu, or visit the Help Desk website at http://help.ncsu.edu.

Lectures: Lectures will consist of traditional lecture periods as well as interactive activities, guest speakers, demonstrations, and discussions. Lecture slides will be posted on Moodle for you to download and use as a reference. Activities in lecture include computer work and group challenges; most will include writing and/or diagramming (flowcharts and/or concept maps).

Laboratory: Laboratory experiments are designed to reinforce concepts and provide you with the opportunity to gain valuable experience with some of the techniques we discuss in lecture. Experiments consist of both wet-lab and computer-based activities. Generalized lab protocols will be posted on Moodle and the LabArchives (http://www.labarchives.com/) electronic lab notebooks we will be using prior to the day of the lab. You are responsible for **reading** the protocol in its **entirety** before lab.

Laboratory reports: Lab reports must be typed in grammatically correct English and should demonstrate an understanding of the experimental method as well as the interpretation of the results. You may discuss results with your classmates, but reports are to be written ***independently***. Plagiarism = dishonesty (see section below). **All lab reports will be submitted electronically using Moodle. No late lab reports will be accepted.** Lab report guidelines can

be found on Moodle. A rubric is provided on the course website, and a scored rubric is returned with your lab report grade and feedback from your instructors.

Lab notebooks and course binders:

♦ *Lab notebooks* will be kept by each student regardless of whether you are working with a partner. We will be using **electronic lab notebooks** maintained by LabArchives (visit: http://www.labarchives.com/). Describe the purpose/hypothesis and date for each entry. Copying the protocol word for word is not necessary, but you must indicate if you modified the posted procedure. Results should be entered during the laboratory period so that you may refer to them when you compose your lab report. Include any data/values that will be needed in generating your final data. Brief conclusions should also be stated. Most computational analyses and activities will be based on worksheets guiding participants through analyses. A series of questions and diagramming assignments will then be used to determine your comprehension of the concepts, specific steps, and overall processes we discuss. Your notebook is your best asset for a more detailed and thought-provoking lab report: it is in your best interest to keep it complete and current. The instructor or TA will verify your completed entries before you leave each week. Your notebook will be graded at the end of the course. For notebook grading guidelines, please refer to the Moodle website.

♦ *Course binders.* **You will be required to keep a binder** with your articles, any related printouts, lecture notes, and lab reports. Furthermore, digital copies of sequence files and data generated must be stored at least on one **USB flash drive** since multiple students use the BIT laptops. Guidelines for keeping lab notebooks, course binders, and digital files are posted on the site.

Journal club readings and assignments. Three (3) papers will be assigned for class discussion. Papers will available on the course website. On the day of each discussion, a short assignment will be due. These assignments consist of questions about the paper and/or a summary. Furthermore, we will read three short reviews (on days when no journal club paper is presented). Read the reviews carefully, as the in-class quiz will include questions on the topics covered in these readings. Descriptions of the assignments and rubrics are provided on the Moodle course site.

In-class assignments: Throughout the course, we will engage in **activities including short assigned readings from eBooks available via the NCSU Libraries (http://www.lib.ncsu.edu/), class discussions, and writing opportunities. Written assignments will be collected at random and graded** (see "Assignments" grade item) to assess your understanding of the material covered in lectures, lab sessions, guest lectures, and posted readings.

Quizzes: Short in-class quizzes consisting of three or four questions (true/false, short answer, multiple-choice, open-ended, and diagrams) will be used to ensure you are keeping up with the course and understanding key concepts. Questions will be answered *individually without the aid of the internet, books, and/or notes*. Quizzes will serve as a **review** for the final exam. Quizzes will take place at the **beginning** of the class period and take 5-10 minutes to complete. Quiz grades will count toward your Quiz grade and be used to monitor attendance.

Final Exam: The final exam will be a **cumulative in-class evaluation** held during the last week of class. It may address any concept touched upon in lecture or laboratory. The exam may include multiple choice, true/false, short answer, and essay questions. Studying the lecture

notes and assigned articles will be very helpful and worthwhile. ♦ Students registered for BIT 577 will have an additional section on the final exam focusing on the **design of a workflow** for analyses of a sample metagenomic data set. In preparation for the final exam, we will have a short review after the midpoint of the module.

Course Materials:

Software and devices: The Biotechnology Program (BIT) has laptops available for our use during this course, but **you are encouraged to bring your personal laptop**. We will be using specialized software including Geneious and have procured a limited number of licenses on the BIT laptops. You can also try a two-week trial from Geneious.com. All other software packages used are free and available online.

Required book and other supplies: There is NO required textbook for this course. All material will be made available on the Moodle course site. We will be using two recent eBooks (available via the NCSU Libraries) that focus on metagenomics and provide a comprehensive overview of the topics we will discuss. While we will not cover all chapters, you are encouraged to read other chapters in areas of personal interest.

The Biotechnology Program will provide access to the electronic lab notebooks we will use. You must bring a USB **flash drive** to each lab to store data. One of the major goals of this lab module is to *provide you with the tools necessary to pursue metagenomic studies in your own research or job*. To full take advantage of the resources we cover in class, you will need to have a **binder** in which you compile *all* the materials (lecture notes, reports, worksheets, and papers) we discuss throughout the course. This will be a good resource later on and will also help you organize yourself! A USB drive will serve as an electronic repository for data sets, papers, diagrams, and freeware programs we use in the course.

Evaluation Methods:

Item	477 Weight (%)	577 Weight (%)
Lab report #1	**10**	**10**
Lab report #2	**15**	**15**
Electronic lab notebook and course binder	**10**	**10**
Journal club readings (3) and assignments	**15**	**15**
In-class assignments	**5**	**5**
Quizzes (3)	**10**	**10**
Lecture participation and lab citizenship**	**	**
Final presentation/data analysis	**15**	**10**
Final exam	**20**	**25**
Total	**100**	**100**

**Laboratory and classroom citizenship is based on completing in-class assignments, punctuality, courtesy, cleanliness, and class participation. Failure to meet citizenship expectations can result in a 10% reduction in your final grade

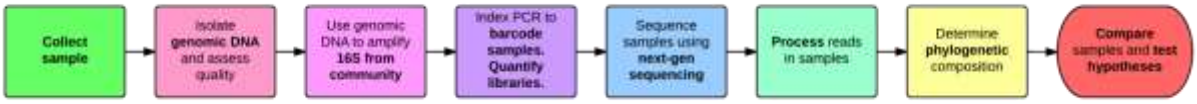
This Course uses Standard NCSU Letter Grading:

97	≤	**A+**	≤	100
93	≤	**A**	<	97
90	≤	**A-**	<	93
87	≤	**B+**	<	90
83	≤	**B**	<	87
80	≤	**B-**	<	83
77	≤	**C+**	<	80
73	≤	**C**	<	77
70	≤	**C-**	<	73
67	≤	**D+**	<	70
63	≤	**D**	<	67
60	≤	**D-**	<	63
0	≤	**F**	<	60

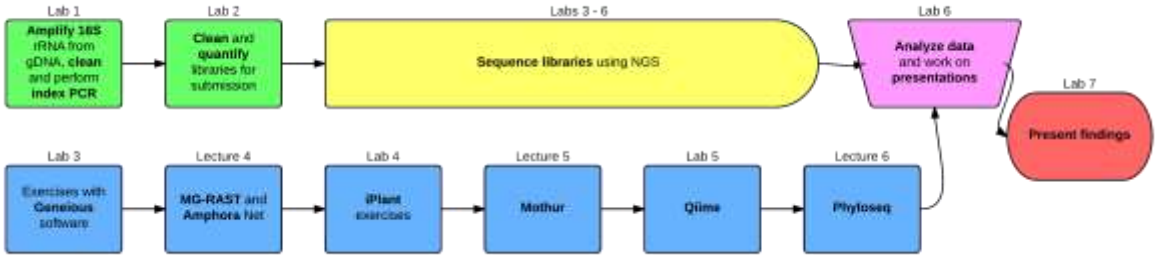
A grade of **Incomplete (IN)** will be given only if there is an excused significant and verifiable disruption in the student's work.

Schedule:

"Wet" lab workflow:



All lab sessions:



Schedule:

Week of…	Lab procedure (Tuesday)	Lecture topic (Thursday)
01/04	**Tuesday 01/05** **NO CLASS YET!** **Please complete online survey.**	**Thursday 01/07. Lecture 1.** Introduction to deep sequencing and metagenomics. Discussion of Paper #1.
01/11	**Tuesday 01/12. Lab 1.** Safety training. Overview of lab project (**lecture**): *How will we use metagenomics tools for this study?* Experimental design (during 16S PCR). Sample preparation day #1: Genomic DNA preparation, 16S rRNA amplification.	**Thursday 01/14. Lecture 2.** Quiz #1. Metagenomic surveys: Sargasso Sea, The Human Microbiome Project, Earth Microbiome Project... our own homes.
01/18	**Tuesday 01/19. Lab 2.** Sample preparation day #2: PCR clean-up of 16S amplicons, and index PCR. Index PCR clean-up and quantification of libraries. Preparation of samples for sequencing submission. Discussion of considerations for sample preparation.	**Thursday 01/21. Lecture 3.** Discussion of Paper #2. File types and FASTQC. Pre-processing reads. Introduction to Geneious software. FASTQC/Geneious activity.
01/25	**Tuesday 01/26. Lab 3.** **Lab report guidelines.** Geneious software for metagenomic sample analyses. Case study on data visualization/water sanitation using Geneious.	**Thursday 01/28. Lecture 4.** Quiz #2. MG-RAST and AmphoraNet. AmphoraViz activity.

02/01	**Tuesday 02/02. Lab 4.** **Lab Report 1 due:** Experimental design, sample preparation, quantification, and submission. iPlant activities.	**Thursday 02/04. Lecture 5.** Discussion of Paper #3. Introduction to QIIME.
02/08	**Tuesday 02/09. Lab 5.** Duke chambers project and QIIME **Guest speaker: Dr. Julia Stevens**	**Thursday 02/11. Lecture 6.** Quiz #3. Data visualization with R and Phyloseq activity.
02/15	**Tuesday 02/16. Lab 6.** Analyses of our data using the tools we covered. **Work on presentations.** **Summary of review due.** **Review and feedback.**	**Thursday 02/18. Exam.** **FINAL EXAM!**
02/22	**Tuesday 02/23. Lab 7.** **Final presentations.** **Lab notebooks/course binders due.**	**Thursday 02/26** **GUEST LECTURE: Dr. Tiffany Prest** **Lab Report 2 due 10/09:** Computational analyses of your metagenomic data. **Please complete online survey.**
Final Exam: Thursday, January 18th, 3:00-4:50 pm Jordan Hall 6117 *(If you have multiple exams this day, please let me know, and we will try to arrange for you to take the exam at another time)*		

Attendance Policy: You will be working in groups for the duration of the course. It is your responsibility to read the laboratory protocol *before* class and to *attend each session*. Failure to do so will place an undue burden on your lab partner. Attendance to ALL laboratories is

mandatory. Examples of excused absences are scientific conferences pre-approved by the instructor, religious observance, death in the family or serious illness/injury, and a doctor's note. Review the NCSU policy on excused absences: http://policies.ncsu.edu/regulation/reg-02-20-03. **To be considered for an excused absence, you must present the instructor with a written excuse for your absence no later than the next class period. The burden to remember this written notice is on the student. Any planned absence should be requested for approval prior to the absence. Illnesses must be documented with a doctor's note.**

One unexcused absence from lab will result in a reduction of a full letter grade in the course (10 percentage points off the final grade). Two unexcused absences will result in failure of the course. Lecture attendance is also required and will be reflected in your participation grade. Lates to lab are counted as follows: **2** unexcused lates of 15 minutes or more count the same as an unexcused absence. Repeated lates of 5 minutes or more will affect class participation grade. Students **may not leave a lab that is still in session** without prior approval from the instructor and appropriate documentation. If a student leaves a lab that is not approved, the student's absence will be considered an unexcused absence, and they will be penalized as described above.

Any assignment or work missed during an excused absence is required to be made up by the student. Assignments due on the date of an excused absence need to be turned in before their absence if the absence is arranged with the Instructor prior to the due date of the assignment. For an excused absence without advanced notification, students must schedule a time with the instructor to make up the assignment as soon as possible. No make-up work will be offered for unexcused absences.

Audits: Students auditing the course must discuss assignment requirements with the instructor the first week of class. Attendance is required of auditors.

Academic Integrity: Guidelines set forth in the NCSU Policy on Academic Integrity will be strictly followed. These can be viewed at: http://policies.ncsu.edu/policy/pol-11-35-01.

In particular, sections 7-12 should be reviewed if there is any doubt as to what constitutes plagiarism or cheating. **It should also be noted that helping others is a violation if independent work is requested.** You will be working with a partner for each of the laboratory exercises. It is expected that you will work together or in groups for data analysis and presentation. However, each lab report must contain original data from your experiments, and the written part must be in your own words and represent your understanding of the conclusions to be drawn from the experiment. You also must not copy directly from the posted protocols. Any evidence of plagiarism will be dealt with according to section 13.

The following section of the policy is repeated here as a reminder of academic integrity:

> "8.2 A student shall be guilty of a violation of academic integrity if he or she:
> - represents the work of others as his or her own;
> - obtains assistance in any academic work from another individual in a situation in which the student is expected to perform independently;
> - gives assistance to another individual in a situation in which that individual is expected to perform independently;
> - offers false data in support of laboratory or field work."

No course materials from previous semesters may be used for any assignment. No old exams, lab reports, assignments, or notes may be used.

Students with Disabilities: Reasonable accommodations will be made for students with verifiable disabilities. In order to take advantage of available accommodations, students must register with Disability Services for Students at: Student Health Services Building, 2815 Cates Avenue, Suite 2221, Campus Box 7509, phone number 919-515-7653. For more information on NC State's policy on students with disabilities, please see the Academic Accommodations for Students with Disabilities Regulation (http://dso.dasa.ncsu.edu/). Please also meet with me as soon as possible to discuss special accommodations.

Behavior is also addressed under the Code of Student Conduct: misbehavior of any kind will not be tolerated and includes behavior that is directed toward a particular person (or persons), is unwelcome and severe or pervasive, and violates criminal law, civil rights law, the NCSU Administrative Regulation on harassment, or that unreasonably interferes with the target person's employment, academic pursuits, or participation in University-sponsored activities.

Class Etiquette: Students are expected to be respectful of the instructor, TAs, BIT staff, and fellow students; any inappropriate disruptions to class will result in a point reduction from the class participation grade. **This includes talking about non-course related material and the use of cell phones (including text messaging) during lecture**. Students should not use their cell phones during active parts of an experimental protocol (and *remember to always remove gloves before touching your cell phone, computers, or tablets*). Students should follow all safety rules and guidelines posted by the instructor, TA, or fellow BIT staff; failure to do so will result in a reduction of the class participation grade.

Laboratory Attire: We will be working in a laboratory setting. This means you will be in contact with a number of chemical and non-chemical hazards. Therefore, for your personal safety in the lab, you are **required to wear closed-toed shoes and lab coats and safety glasses** (lab coats and safety glasses will be provided).

NCSU Student Ombudsman services (http://ombuds.dasa.ncsu.edu/) may be used to verify academic absences or assist students by advocating fair processes and empowering students to identify resources.

Online Class Evaluations will be available for students to complete during the last two weeks of class. Students will receive an email message directing them to a website where they can login using their Unity ID and complete evaluations. All evaluations are confidential; instructors will never know how any one student responded to any question, and students will never know the ratings for any particular instructors. Class evaluations inform instructors and BIT staff on ways to improve courses and modules. *We appreciate your feedback!*

Evaluation website: https://classeval.ncsu.edu

Student help desk: classeval@ncsu.edu

More information about ClassEval: http://www2.acs.ncsu.edu/UPA/classeval/index.htm

BIT478/578: Mapping the Brain

You ***MUST*** be registered for lecture (section 001) and lab (section 201) to receive credit for this course.

Instructor: Dr. Sabrina Robertson
E-mail: sedought@ncsu.edu
Phone: (919) 513-0330
Office hours: 6104 Jordan Hall by appointment

Teaching and Research assistant: Zac Johnson (zajohnso@ncsu.edu)

Course Meetings: August 19th-October 12th

Laboratory	Tuesday	12:35-5:35 pm	6109 Jordan Hall
Lectures	Thursday	1:30-3:20 pm	6117 Jordan Hall

Course Description: Mapping the Brain is designed to provide students with an inquiry-based authentic neuroscience research experience. In lecture, students will gain an appreciation for the fundamental challenges inherent in studying the brain and explore the theory, applications, and limitations of new and traditional technologies employed in modern neuroscience. In the lab, students will use a novel transgenic mouse model to analyze the connections of a single population of neurons and the effects of stimulating their activity *in vivo*. This hands-on laboratory research experience will expose students to a combination of universal laboratory approaches (histology, microscopy, etc.) as well as to new genetic approaches that are becoming common staples in every neuroscientist's toolkit.

Prerequisite: BIT410/510 Manipulation of Recombinant DNA/Core Technologies in Molecular Biology

Course goals:

After completing the course, students will:

1. Appreciate the fundamental challenges inherent in studying the brain
2. Understand the applications and limitations of traditional and emerging methodology in modern neuroscience
3. Have applied a combination of laboratory approaches to investigate a collaborative neuroscience research project

Student Learning Outcomes:

Upon completion of the course, students will be able to:

Intellectual Skills

1. Design an experiment to explore the function and connections of a single population of neurons
2. Evaluate the limitations and potential of traditional and modern neuroscience tools
3. Analyze and interpret data from primary research articles that employ novel methodology
4. Discuss the limitations of studying the brain in humans and the importance of model organisms
5. Identify traditional and emerging therapeutics used to treat neurobiological disorders

BIT578 specific outcome

6. Compare and contrast optogenetic and chemogenetic approaches for the norepinephrine system

Technical Skills

1. Explain how brain tissue is handled and prepared for different experimental applications
2. Demonstrate proficiency in immunostaining for visualization of neurons and their projections in brain slices
3. Employ microscopy to quantify the density of neuronal projections
4. Analyze immediate early gene expression to assess neuronal activation patterns
5. Analyze behavioral data

Course Materials:

No textbook is required for this course. We will be using scientific literature (primary research articles and reviews).

- Bound Lab Notebook (~3$) Notebooks used for other BIT courses can be used.
- USB Flash Drive (~15$)

Grading:

Item	Weight (%)
Lab notebook	**5**
Lab report 1 (Neuronal excitability)	**10**
Lab report 2 (DREADD project)	**20**
Primary literature analysis worksheets	**15**
Journal club participation	**10**
Design Presentation	**20**
Final Exam	**20**
Laboratory & classroom citizenship	***-10%***

Laboratory and classroom citizenship is expected!!! Ten points can be deducted from your total grade for poor citizenship. Citizenship is based on punctuality, courtesy, participation, collegiality and cleanliness.

This Course uses Standard NCSU Letter Grading and Numerical grade cut-offs are as follows:

97	≤	**A+**	≤	100
93	≤	**A**	<	97
90	≤	**A-**	<	93
87	≤	**B+**	<	90
83	≤	**B**	<	87
80	≤	**B-**	<	83
77	≤	**C+**	<	80
73	≤	**C**	<	77
70	≤	**C-**	<	73
67	≤	**D+**	<	70
63	≤	**D**	<	67
60	≤	**D-**	<	63
0	≤	**F**	<	60

Schedule:

Week	Laboratory	Lecture
1	Tuesday August 18th No Laboratory	Thursday August 20th **Lecture1: Neuron excitability** • Course overview, syllabus & expectations • Qualtrics Survey • Studying the brain • Neuron Excitability • **Sign up for Day 1 of Mapping Lab**
2	Tuesday August 25th **Lab1:** • Lab Safety • Mini Lecture: Introduction to DREADD project • **Exploring neuron excitability in insects (1)**	Thursday August 27th **Lecture2: Studying neuronal diversity and the connectome** • **Interim lab: Day 2 of Mapping Lab** • **"The BRAIN initiative: developing technology to catalyze neuroscience discovery" Jorgenson et al. 2015**
3	Tuesday September 1st **Lab2**: • **Day 3 of mapping lab** • Dissections of mouse tissue • Mini Lecture: Allen brain atlas activity and Introduction to DREADD project part II	Thursday September 3rd **Lecture3**: **Manipulating neuronal activity** • Stimulating behavior via activation of specific neuronal circuits • DREADDS • Channelrhodopsin • **JOURNAL CLUB: "Functional and Developmental Identification of a Molecular Subtype of Brain Serotonergic Neuron Specialized to Regulate Breathing Dynamics" *Cell Reports* Brust et al. 2014**
4	Tuesday September 8th **Lab3**: • **Insect lab report due (1)!** • **Day 4 of Mapping Lab (image, pictures & analysis)** • **Day 1 of cFos & Projection Lab**	Thursday September 10th **Lecture4: Observing neuronal activity and behavior** • Calcium imaging • cFos • Anxiety paradigms (open field, light dark, and EPM)
5	Tuesday September 15th **Lab4**: • **Design presentation outline due** • **Day 2 of cFos & projection lab**	Thursday September 17th **Lecture5: Ethical treatment of laboratory animals** • Institutional animal care and use • **JOURNAL CLUB: "Generation of a synthetic memory trace." *Science* Garner et al. 2012 "Optogenetic stimulation of a hippocampal engram activates fear memory recall" *Nature* Liu et al. 2012**
6	Tuesday September 22nd **Lab5**: • **DREADD project rough draft lab report due** • **Day 3 of cFos & projection lab (image, pictures & analysis)**	Thursday September 24th **Lecture6: Modeling neurobiological disorders in animals & current therapeutics** • Neurodegenerative disorders • Mental health disorders • Major drug targets and new therapeutics • **JOURNAL CLUB: "Optogenetics enables functional analysis of human embryonic stem cell-derived grafts in a Parkinson's disease model" *Nature Biotechnology* Steinbeck et al. 2015**
	Tuesday September 29th **Design presentations** (use a new tool to explore the function of your favorite neuronal population)	Thursday October 1st **Lab6**: • **Behavioral data analysis**
8	Tuesday October 6th **Cumulative Final EXAM 12:35 – 3:35pm**	Thursday October 8th **FALL BREAK!!! No Class** **DREADD project lab report due**

Attendance Policy: Attendance is mandatory. You will be working in groups of two for the duration of the semester. It is your responsibility to read the laboratory protocol *before* class and to *attend each session*. Failure to do so will place an undue burden on your lab partner. Attendance at **ALL** laboratories is mandatory. Examples of excused absences are scientific conferences pre-approved by the instructor, religious observance, death in the family, or serious illness/injury accompanied by a doctor's note. Review the NCSU policy on excused absences: http://policies.ncsu.edu/regulation/reg-02-20-03. **To be considered for an excused absence, you must present the instructor with a written excuse for your absence no later than the next class period. The burden to remember this written notice is on the student. Any planned absence should be requested for approval prior to the absence. Illnesses must be documented with a doctor's note.**

One unexcused absence from lab will result in a reduction of a full letter grade in the course (10 percentage points off the final grade). Two unexcused absences will result in failure of the course. Missing a lecture period during which lab exercises/activities are performed decrease your final grade by 5 percentage points. If both partners miss a lecture period during which lab exercises are performed, it is possible that you will be unable to complete that week's lab. If you have more than two **excused lab** absences, you will receive an incomplete for the semester. Unexcused absences to lecture will affect your class citizenship grade.

Lates to lab are counted as follows: two unexcused lates of 15 minutes or more count the same as an unexcused absence. Repeated lates of 5 minutes or more will affect your class citizenship grade. Students **may not leave a lab that is still in session** without prior approval from the instructor and appropriate documentation. Leaving the laboratory while in session for any period of time greater than 15 min without prior approval from the instructor will be counted as an **unexcused lab absence** (see above for penalty).

Any assignment or work missed during an excused absence is required to be made up by the student. Assignments due on the date of an excused absence need to be turned in before their absence if the absence is arranged with the Instructor prior to the due date of the assignment. For an excused absence without advanced notification, students must schedule a time with the instructor to make up the assignment as soon as possible. **No make-up work will be offered for unexcused absences.** A grade of **Incomplete (IN)** will be given only if there is an excused significant and verifiable disruption in the student's work.

Lab notebooks: Each entry must be dated and must include a reference to the protocol, as well as all results, conclusions, and answers to discussion questions. You must complete your notebook entry before leaving the lab, and your TA must sign your notebook before you leave the lab. Your lab notebook will be collected and graded at the end of the semester. For notebook grading guidelines, refer to the Moodle website.

Lab reports: Lab reports must be typed and submitted either as a pdf or a word document in **journal article format**. This will be good practice for entering the research world so choose your favorite journal and make your lab report look like articles published in that journal. All lab reports should contain the following sections: title, purpose/introduction, materials and methods, results (data and text), and discussion. You may discuss results with your lab partner, but reports are to be *written independently and in your own words*. Lab reports will be submitted on-line and are due by **12:35 pm at the start of lab**. **No late lab reports will be accepted; any lab report that is not turned in on time will receive a zero.**

Primary literature analysis worksheets: Primary lit analysis worksheets are due at the start of the lecture period when the article will be discussed. These worksheets are designed to help you read primary scientific literature and serve as an aid for you during journal club discussion, so be sure to print two copies one for yourself and one to turn in.

Journal club participation: Students will be graded on their participation in three journal club discussions in class. Students are expected to read the entire paper and come prepared to discuss or present ***any figure*** in the paper. See the posted journal club participation rubric for more details.

Design Presentation: Students will work in pairs to design a research strategy, using a cutting edge neuroscience technique, to explore the function or projection pattern of your favorite neuronal population. You will use a published research article as your foundation for developing a scientific question and your growing knowledge of neuroscience methodology to design a future research strategy to answer that question. Students will then present their strategy to the class in a 15-minute presentation with an opportunity for questions from their peers at the end.

Final Exam: Exam will be a mixture of multiple choice, short answer and essay. *NOTE BIT578 students will be expected to complete an additional open book portion of the final exam*

Laboratory & classroom citizenship: Students are expected to be respectful of the instructor, TAs, BIT staff, and fellow students; any inappropriate disruptions to class will impact citizenship grade (*Ten points can be deducted from your total grade for poor citizenship*). This includes talking about non-course related material and the **use of cell phones (including text messaging)** during lecture. Students should follow all safety rules and guidelines posted by the instructor, TA or fellow BIT staff; failure to do so will result in a reduction of the citizenship grade.

Late Assignments and Assignment Submission: No late assignments will be accepted unless the Instructor receives proper documentation (i.e., Doctor's note that is submitted to the Instructor). Any assignments turned in after the due date without proper documentation will receive a ***zero***.

Lecture notes: The lecture slides will be posted on Moodle prior to lecture. http://wolfware.ncsu.edu/. These slides outline the day's lecture, but they do not cover every detail we cover in class. You are responsible for coming to class and taking appropriate notes. You must also bring your lab notebook to lecture each week.

Lab protocols: All lab protocols must be read **BEFORE** coming to lab, and must be brought to the laboratory.

Academic Integrity: No course materials from previous semesters may be used for any assignment in this course. No old exams, papers, lab reports, assignments, or notes, etc. may be used.

Guidelines set forth in the NCSU Policy on Academic Integrity will be strictly followed. These can be viewed at http://policies.ncsu.edu/policy/pol-11-35-01.

In particular, sections 7-12 should be reviewed if there is any doubt as to what constitutes plagiarism or cheating. It should also be noted that helping others is a violation if independent work is requested. You will be working with a partner for each of the laboratory exercises. It is expected that you will work together, or in groups, for data analysis and presentation. However, each lab report must contain original data from your experiments and the written part must be in your own words and represent your understanding of the conclusions to be drawn from the experiment. **You also must not copy directly from the lab protocols.** Any evidence of plagiarism will be dealt with according to section 9.

Students with disabilities: Reasonable accommodations will be made for students with verifiable disabilities. In order to take advantage of available accommodations, students must register with Disability Services for Students at 1900 Student Health Center, Campus Box 7509, 515-7653. For more information on NC State's policy on students with disabilities, please see the Academic Accommodations for Students with Disabilities Regulation (http://dso.dasa.ncsu.edu/). Please also meet with me as soon as possible to discuss special accommodations.

Behavior is also addressed under the Code of Student Conduct: Inappropriate behavior of any kind will not be tolerated and includes behavior that is directed toward a particular person (or persons), is unwelcome and severe or pervasive, and violates criminal law, civil rights law, the NCSU Administrative Regulation on harassment, or that unreasonably interferes with the target person's employment, academic pursuits, or participation in University-sponsored activities.

Online course evaluations will be available for students to complete during the last two weeks of class. Students will receive an email message directing them to a website where they can login using their Unity ID and complete evaluations. All evaluations are confidential; instructors will never know how any one student responded to any question, and students will never know the ratings for any particular instructors.
Evaluation website: https://classeval.ncsu.edu Student help desk: classeval@ncsu.edu
More information about ClassEval: http://www2.acs.ncsu.edu/UPA/classeval/index.htm

Audits: Students auditing the course must discuss assignment requirements with the instructor the first week of class. Attendance is required of auditors.

Important Dates: Refer to **http://www.ncsu.edu/registrar/calendars/academicfall.html** for more detail.

8/25/16: Last day to add a course without instructor permission

9/1/16: Last day to add (with instructor approval) or drop a course without a W grade (Census Day)

10/8/16-10/9/16: Fall break – no lab

10/16/16: Drop/Revision Deadline (last day to change to credit only)

10/20/16: Enrollment for Spring 2016 begins

11/25/16-11/27/16: Thanksgiving Holidays – no lab

12/4/16: Last day of class

12/7/16: Reading day

12/8/16-12/16/16: Final Exams

Supporting Fellow Students in Distress: As members of the NC State Wolfpack community, we each share a personal responsibility to express concern for one another and to ensure that this classroom and the campus as a whole remains a healthy and safe environment for learning. Occasionally, you may come across a fellow classmate whose personal behavior concerns or worries you, either for the classmate's well-being or yours. When this is the case, I would encourage you to report this behavior to the NC State's Students of Concern website: http://go.ncsu.edu/NCSUcares. Although you can report anonymously, it is preferred that you share your contact information so they can follow-up with you personally.

FS/ANS Introduction to HACCP (3 credits)

Instructors:	Dr. Clint Stevenson (instructor)	Ms. Caitlin Alberts (teaching assistant)
E-mail:	clint_stevenson@ncsu.edu	cmalber2@ncsu.edu
Office:	116 Schaub Hall	
Phone:	919-513-2065	
Office hours:	By appointment in person or virtual office hours available via Google Hangouts.	
Prerequisite:	None	
GER:	None	
Website:	Moodle: https://wolfware.ncsu.edu	
Text:	None required	

Student outcomes:

This online course teaches students how to implement and manage the Hazard Analysis and Critical Control Points (HACCP) system, which was designed by the Food and Drug Administration as a food safety management system for controlling food hazards. By completing this course, students will earn a HACCP certification. They will learn the twelve step process for developing and implementing a HACCP plan and how to manage both HACCP and pre-requisite programs in a way they may have confidence that their food products will be safe and wholesome. This HACCP Alliance approved course is intended for both industry personnel and undergraduates seeking HACCP certification. It is a sixteen-week online course consists of videos, an online textbook, quizzes, activities and discussion forums. Students will be exposed to the Howling Cow Case Study, which allows them to gain experience in developing a HACCP system for the NC State University dairy processing plant on campus in Schaub Hall. Students will earn their HACCP certification upon completion of the course. This course counts towards the Food Safety Manager's Certification Program.

Specifically, students will be given the training and opportunity to accomplish the following learning outcomes:

1. Construct pre-requisite programs that control food safety hazards in food processing environments for an extensive HACCP plan for any given food product
2. Apply the seven principles of HACCP towards controlling food safety hazards in critical food processing steps as required by a successful HACCP plan for any given food product
3. Analyze the requirements of HACCP system-related regulations in the Code of Federal Regulations for any given food product
4. Describe the food safety enforcement responsibilities of U.S. food safety regulatory agencies overseeing food-processing companies
5. Demonstrate teamwork principles while creating a HACCP plan.

Instructors' teaching perspective:

Learning should be fun, stimulating, interactive, and purposeful. My goal is to create and deliver lessons that are student-focused, such that students may learn by doing. In creating such lesson plans, my intention is that students will confront and qualitatively change their conception of the subject matter. So, together we will facilitate your career development in becoming an expert in HACCP systems, through classroom discussions, reading assignments, team activities, and self-reflection. There are different levels of learning. You will "get out of it what you put into it," so please come to class prepared and dedicate your full focus and energy towards classroom activities and assignments. In the end, my hope is that this course will help you to follow your dreams, whatever those may be.

Grading: Grades are intended to provide positive motivation and opportunities for students to develop professional skills for careers in the food and bioprocessing industries. FS 350 is a graded course. The University's grading policies are posted at http://www.ncsu.edu/policies/academic_affairs/courses_undergrad/REG02.20.15.php.

Assignments will be graded on a scale of 1 to 10. All grades will be averaged and multiplied by 100 and final grades will be determined according to the University's grade scale (see below).

Score	Grade	Score	Grade
97 - 100	A+	73 - 76	C
92 - 96	A	70 - 72	C-
90 - 91	A-	67 - 69	D+
87 - 89	B+	63 - 66	D
83 - 86	B	60 - 62	D-
80 - 82	B-	< 59	F
77 - 79	C+		

Exercises: Each week you will be given a combination of assignments, quizzes, and group projects. Each of these activities will be announced at the beginning of each week.

8%	Attendance
1%	Beginning of Semester Food Safety Survey
10%	Weekly Quizzes
10%	Weekly Discussion Forum Entry
10%	Weekly Discussion Forum Response
20%	Weekly HACCP Assignment
20%	Weekly HACCP Assignment Peer Review
1%	End of Semester Food Safety Survey
20%	Final Exam

Attendance: Attendance will be monitored based on whether you go through the interactive module that is posted each week. It will be worth 8% of the overall course grade; see "Grading" section above.

Quizzes: Each week there will be a quiz based on the lesson of that week. These are worth 10% of the class grade; see "Grading" section above.

Surveys: Students are expected to complete a survey at the beginning (due 5pm August 22) and end of the semester (due 5pm December 15). Each of these is worth 1% of the final course grade; see "Grading" section above. These surveys are for program evaluation and course improvement purposes.

Discussion Forums:

Each student will be required to post an original entry by 11pm each Wednesday and then respond to a classmate's entry by 11pm Friday. Each of these activities will be worth 10% of the final course grade; see "Grading" section above.

Weekly HACCP Assignments & Peer Reviews

These exercises have two parts. First, you'll be given a case study and expected to submit a summary of how you would approach various aspects of HACCP in that case study by 11pm EST on Wednesday. Then you'll be expected to peer review a classmate's entry by 11pm EST Friday. The entry and peer review are each worth 10% of the class grade; see "Grading" section above.

Final Exam: The final exam will be comprehensive. It will be a combination of quiz questions and a take home assignment. It is worth 20% of the class grade; see "Grading" section above.

Incompletes: Incomplete grades must be resolved within one day of the grade and will be reduced by 10% per day or partial day that they are made up.

Incomplete Grade Policy:

If an extended deadline is not authorized by the instructor or department, an unfinished incomplete grade will automatically change to an F after either (a) the end of the next regular semester in which the student is enrolled (not including summer sessions), or (b) the end of 12 months if the student is not enrolled, whichever is shorter. Incompletes that change to F will count as an attempted course on transcripts. The burden of fulfilling an incomplete grade is the responsibility of the student. The university policy on incomplete grades is located at http://policies.ncsu.edu/regulation/reg-02-50-3.

Requirements for Credit-Only (S/U) Grading:

In order to receive a grade of S, students are required to take all exams and quizzes, complete all assignments, and earn a grade of C- or better. Conversion from letter grading to credit only (S/U) grading is subject to university deadlines. Refer to the Registration and Records calendar for deadlines related to grading. For more details refer to http://policies.ncsu.edu/regulation/reg-02-20-15.

Requirements for Course Auditors:

Information about and requirements for auditing a course can be found at http://policies.ncsu.edu/regulation/reg-02-20-04.

Course schedule:

Week 1	History of HACCP
Week 2	Basic Components of HACCP
Week 3	Pre-requisite Programs
Week 4	Sanitation Standard Operating Procedures
Week 5	Preliminary Tasks
Week 6	Food Safety Hazards
Week 7	HACCP Principle #1
Week 8	HACCP Principle #2
Week 9	HACCP Principle #3
Week 10	HACCP Principle #4
Week 11	HACCP Principle #5
Week 12	HACCP Principle #6
Week 13	HACCP Principle #7
Week 14	Enforcement of HACCP
Week 15	Review and Final Exam

Tutor Services: Students are encouraged to utilize the university's Writing and Speaking Tutorial Services center for help with preparing their assignments: http://www.ncsu.edu/tutorial_center/writespeak/

Feedback: Student feedback will always be welcome, via e-mail and phone.

Integrity: All students are expected to adhere to the NCSU Code of Student Conduct and the Honor Pledge. Students determined to be violating this policy will be reported and a class grade of zero will be given for the work in question. For more information on the university's policies see the website below.
http://www.ncsu.edu/policies/student_services/student_discipline/POL11.35.1.php

Disabilities: Reasonable accommodations will be made for students with disabilities to ensure that their academic requirements can be met successfully. For information, students should contact Handicapped Student Services or Disability Services for Students, Suite 1900 at the Student Health Services Center (phone 515-7653). Students with disabilities should see the instructor to discuss academic considerations. Such needs will be kept confidential.

Class Eval.: Online class evaluations will be available for you to complete during the last 2 weeeks of the semester. Then they become unavailable at 8am on the first day of finals for the full

Fall semester. This semester those dates are from 8am April 14 to 8am April 28. Please complete this evaluation so I may know how to improve my teaching effectiveness.

Honesty: See http://policies.ncsu.edu/policy/pol-11-35-01 for a detailed explanation of academic honesty.

Discrimination: NC State University provides equality of opportunity in education and employment for all students and employees. Accordingly, NC State affirms its commitment to maintain a work environment for all employees and an academic environment for all students that is free from all forms of discrimination. Discrimination based on race, color, religion, creed, sex, national origin, age, disability, veteran status, or sexual orientation is a violation of state and federal law and/or NC State University policy and will not be tolerated. Harassment of any person (either in the form of quid pro quo or creation of a hostile environment) based on race, color, religion, creed, sex, national origin, age, disability, veteran status, or sexual orientation also is a violation of state and federal law and/or NC State University policy and will not be tolerated. Retaliation against any person who complains about discrimination is also prohibited. NC State's policies and regulations covering discrimination, harassment, and retaliation may be accessed at http://policies.ncsu.edu/policy/pol-04-25-05 or http://www.ncsu.edu/equal_op/. Any person who feels that he or she has been the subject of prohibited discrimination, harassment, or retaliation should contact the Office for Equal Opportunity (OEO) at 919-515-3148.

CSC 216 Course Syllabus

CSC 216 – Programming Concepts - Java

Section TBD

FALL 2016

4 Credit Hours

Course Description

The second course in computing, intended for majors. Emphasis is placed on software system design and testing; encapsulation; polymorphism; composition; inheritance; linear data structures; specification and implementation of finite-state machines; interpretation of inductive definitions (functions and data types); and resource management.

Learning Outcomes

Upon successful completion of this course, a student will be able to...

1. Describe the utility of inheritance, abstract classes, interfaces, and polymorphism in object-oriented systems, and design, implement, and test programs which use these language features;
2. Identify the phases of a simple model of the software life cycle, and employ these phases in developing software;
3. Describe basic design modeling techniques, including UML class diagrams and simple design patterns (e.g., model/view/controller), and indicate how and when to use them;
4. Identify and compare the basic kinds of software testing, describe when to use each method, and design and implement test code;
5. Navigate and extract information from the Java API, and employ the Javadoc tool to construct internal documentation of source code;
6. Use software engineering best practices like pair programming, test-driven development, code coverage, static analysis, version control, continuous integration, and documentation with supporting tooling to design, implement, and test object-oriented systems.
7. Design, implement, and test a finite state machine;
8. Identify when recursion is useful, and design, implement, and test recursive algorithms and simple recursive data structures;
9. Implement, test, and use a stack, queue, array-based list, and linked list.

Course Structure

Lecture

Lecture Meetings: You will be presented with several exercises that consist of conceptual questions or short programming tasks. You are encouraged, but not required, to work on these exercises with another class member. At least one member of the pair or team will need to have a laptop computer, or other electronic device, such as a tablet, that can submit answers via a Google form. You (and your partner) will be given credit for correct or mostly correct answers. The exercises provide the opportunity to explore recently covered materials individually or with peers. The exercises are submitted so the instructor can get a feel for the class' comprehension of materials in a timely manner.

Class Attendance: You must submit an answer for at least one exercise per class period to be counted as attending class for that day. If you are absent from class, with an excused university absence, you will not be penalized for missing any exercises associated with the class. See the Attendance section for more details about how attendance factors into your final grade.

Labs

Lab Meetings: You will work with a partner or small team to solve one or more larger design, implementation, and/or testing tasks during lab time. Work completed during labs will be pushed to an assigned GitHub repository and will be evaluated via Jenkins. The lab activities will build on each other and on the Guided Projects. Completion of earlier work on Guided Projects and Labs is needed for successful completion of future labs.

Lab Attendance: Attendance to lab is required and will be recorded for each lab meeting. If you are absent from lab, with an excused university absence, you should discuss how to make up the lab with your course instructor.

Guided Projects

An important aspect of CSC216 is using software engineering best practices and the tooling that supports the best practices to deliver high quality software that meets the system requirements. To introduce you to the software engineering lifecycle, best practices, and course tooling, you will complete two Guided Projects. The Guided Projects integrate pieces of guided practice with independent activities. Each Guided Project is worth 5% of the final course grade. The Guided Projects and labs will build on each other.

Programming Projects

There are 3 programming projects this semester. Each project is broken into 2 parts that will be due approximately every one to two weeks. Part 1 will be a design and black box testing phase and Part 2 will be an implementation, unit testing, and black box testing phase. All project deliverables must be submitted electronically by the due date and follow the specified formats, submission instructions, and naming conventions. Each project write up will specify the specific submission instructions for the project.

Late Project Submissions: All projects (except Design Proposals and Rationales for Part 1) will be accepted up to 48 hours late through the appropriate submission system. You will lose 1 point every 2 hours the project is late, up to 24 points. No submissions will be accepted after the 48-hour late window without a university excused absence. No late submissions will be accepted through email.

Part 1: For Part 1 of each project, you will be given a set of requirements that describe a software system. From the requirements, you will develop a design proposal and rationale document that describes a design for implementing the requirements. Additionally, you will develop a black box test plan that will contain system/functional tests to validate that the future implementation meets the requirements.

Part 2: For Part 2 of each project, all code for the project will be submitted to NC State's GitHub to an instructor provided repository. We will be using a continuous integration program, Jenkins, to automatically compile and test your program (both with your tests and with the teaching staff tests) and provide style feedback. Your grade for Part 2 of that project will be calculated from the last GitHub submission you make before the deadline (even if Jenkins runs after the deadline for that submission) plus additional points for acceptance tests, FindBugs issues, and other related rubric items. The style deductions as derived from Jenkins feedback may be modified

by the teaching staff when manually inspecting your comments. For programming portions of the projects, use of the Eclipse Integrated Development Environment (IDE) is required.

Collaboration: Part 1 of all projects will be completed individually. Part 2 of Projects 1 and 2 will be developed individually or in an optional team of 2 or 3 at the instructor's discretion. Part 2 of Project 3 will be developed in a team of 2 or 3. Students will be eligible for participation in a team for a project only if they submit all deliverables for Part 1 of the project.

Academic Integrity: All programs are to be your own work (for paired and team assignments, all work is to be you and your assigned partner's or assigned team mates' own work). See the "Academic Integrity" section of the syllabus for further details. For each paired/team project, a peer evaluation will be required after the project's submission.

Grading: Part 1 is 20% of the project grade and Part 2 is 80% of the project grade. All three projects are worth 40% of the final grade. The lowest project grade will count half as much (20%) as the two higher project grades (40% and 40%). See the grading breakdown section of the syllabus for examples of calculating each individual project grade and the overall project grade.

Exams

There will be three exams counting 40% of your final grade. These exams will cover all materials (readings, lectures, labs, guided projects, projects, guest speakers, etc.) prior to the exam. All exams will be cumulative appropriate to the materials covered prior to the exam date.

Exams test each student's knowledge on course learning outcomes. Problems during the exam may build on a programming scenario. The exam may require writing a class or several methods of code, designing a system using UML, designing a finite state machine, and providing the code, etc.

Time

You are expected to spend, on **average**, 8 to 12 hours per week outside of class preparing and working on assignments. In some weeks, especially those around project deadlines, you may spend more than 12 hours on course work. Please plan and use your time wisely. Do NOT wait until the last minute to complete programming projects!!!

Course Policies

Computers and Electronic Devices

Students are encouraged to use computers and other electronic devices like tablets during class. The teaching staff asks that students respect their neighbors and keep their focus on course materials rather than games, FaceBook, etc. Electronic devices are required for submission of exercises. If the class is utilizing computers in an inappropriate manner, the instructor reserves the right to require that electronic devices are closed or put away during instruction.

You may not record the lecture without express written permission from the instructor.

Electronic Communication

The teaching staff looks forward to receiving emails and message board posts about any questions you have about the class, materials, exams, and assignments. Below are several rules for electronic communication.

Higher education provides you with a training ground prior to entry into the work environment for your chosen career. You will use many of the following rules of "netequette" when you are communicating with colleagues, your supervisor, or clients once you are in the work world. Although many of the rules of etiquette for electronic communication will be similar in the work environment, we have some specific to this course.

Please observe the following etiquette when communicating with the teaching staff and your peers. The teaching staff receives many emails on a daily basis and the instructor teaches several courses. Please note that a member of the teaching staff will respond to an email or message board within 24 hours on a business day and within 48 hours on a weekend or holiday. Most of the time, we will respond more quickly, but it is not guaranteed.

Also, before sending an email, try to find the answer to the question by using various references already available to you:

- If the question is related to class administration, check the syllabus
- If the question is related to recent information, check previous emails from the teaching staff
- If the question is homework or exam related, check the message board to see if it has already been answered. Also, read your textbook.

For emails, please identify your course, section, and your name in the subject line (first and last name) along with the subject of the message. For example: "CSC216-002 Jenny Smith - Question about Project 1 Part 1".

Email should include a salutation to identify the recipients of the email. For example, begin an email to your instructor with a salutation such as "Hi Dr. Heckman," or "Dr. Heckman". For emails to the sup list, consider a salutation like "Greetings Teaching Staff,". You now have the attention of the email recipients.

The tone of the email message should be professional. Re-read your email before you press Send and make a judgment as to how you would respond if you were a recipient of the email you are planning to send.

If you have a question that is beyond the scope of an email, consider coming to office hours or scheduling an appointment with a member of the teaching staff. If you are a DE student requesting a phone conference, send at least two times of the day that you are available and your timezone. To help with scheduling, check Dr. Heckman's calendar: http://people.engr.ncsu.edu/sesmith5/calendar.html.

If you have several questions or items, please number them for ease of reading. The response will also be easier to understand.

Please spell check and correct mechanical/grammar errors. Avoid emails written only in lowercase and lacking punctuation.

Close your email with your name.

If you have a general question about a homework, post your question to Piazza If you have a question that is more specific or that involves snippets of code, email it to the sup list for your section: csc216-001-sup@wolfware.ncsu.edu.

Grade Appeals

If at any time you feel an assignment was graded improperly, **write** a request for regrade and explain why you believe the assignment was graded improperly. First, discuss the grade with the TA who graded the assignment. If you are still unsatisfied with the answer, submit the assignment to the instructor for a regrade. **All regrade requests must be submitted to the instructor no later than 1 week after the assigned was returned to you. Please talk**

with the TA who graded the assignment FIRST and have the written regrade explanation.

Minimum Grade Requirements

In order to pass the course with a letter grade, assuming a letter grade is earned, you must have a 60+ average on the exams, and you must have a 60+ for your programming assignments (where the Project Grade is calculated as described in the Project category, below).

In order to pass the course with a C or better, assuming a C or better is earned, you must have a 65+ average on the exams, and you must have a 65+ weighted average on the overall programming assignments grade and tutorial grades.

Instructors

Dr. Sarah Heckman (sesmith5) - *Instructor*
Email: sarah_heckman@ncsu.edu
Web Page: http://www4.ncsu.edu/~sesmith5
Phone: 919-515-2042
Office Location: Engineering Building II 2297
Office Hours: TBD

Course Meetings

Lecture

Days: TH
Time: 2:20pm - 3:35pm
Campus: Centennial
Location: TBD
This meeting is required.

Lab

Days: MTW
Time: Varies by lab section - Varies by lab section
Campus: Centennial
Location: EBII 1221
This meeting is required.

Meeting Notes

Students are required to attend one lab section associated with their lecture. Each lab is 110 minutes.

Course Materials

Textbooks

Building Java Programs - *Reges and Stepp*
Edition: 3rd
ISBN: 978-0133360905
Web Link: http://www.buildingjavaprograms.com
Cost: $130.45
This textbook is required.

Expenses

None.

Materials

None.

Requisites and Restrictions

Prerequisites

CSC116 with a C- or higher

Co-requisites

None.

Restrictions

None.

General Education Program (GEP) Information

GEP Category

This course does not fulfill a General Education Program category.

GEP Co-requisites

This course does not fulfill a General Education Program co-requisite.

Transportation

This course will not require students to provide their own transportation. Non-scheduled class time for field trips or out-of-class activities is NOT required for this class.

Safety & Risk Assumptions

None.

Grading

Grade Components

Component	Weight	Details
Projects	**40**	There are three projects. Each project consists of 2 parts. Part 1 is a design and black box test planning phase. Part 2 is an implementation and testing phase. Part 1 of a project is worth 20% of the project grade. Part 2 of a project is worth 80% of the project grade. Therefore, if a student receives an 87 on Part 1 of a project and a 93 on Part 2 of the project, the student's grade for the project is: (87 * .2) + (93 * .8) = 17.4 + 74.4 = 91.8 The lowest project grade is 20% of the overall project grade. The other two project grades are each worth 40% of the overall project grade. Therefore, if a student receives a 73 on Project 1,

Component	Weight	Details
		a 56 on Project 2, and a 95 on Project 3, the student's overall project grade is: (73 * .4) + (56 * .2) + (95 * .4) = 29.2 + 11.2 + 38 = 78.4 All Part 1s will be completed individually. For Part 2, Projects 1 and 2 will be completed individually or may have optional teams at the instructor's discretion. Project 3 will be completed on a team. You will only be placed on a team for Part 2 of a project if you complete Part 1 for that project.
Guided Projects	**10**	There will be two Guided Projects that will introduce you to the course technologies and best practices. Portions of the project will be provided through tutorial sections and portions of the project will be completed independently. Each Guided Project is worth 5% of your final grade.
Labs	**10**	All labs will have a participation and submission requirement. You will be evaluated on your participation and the quality of the lab deliverable. The lab grade will be the average of your grade for each individual lab.
Exam 1	**12**	Exam 1 will cover material from approximately the first third of the course.
Exam 2	**12**	Exam 2 will cover material from approximately the first two-thirds of the course.
Exam 3	**16**	Exam 3 will cover all materials for the course.

Letter Grades

This Course uses Standard NCSU Letter Grading:

97 ≤ **A+** ≤ 100
93 ≤ **A** < 97
90 ≤ **A-** < 93
87 ≤ **B+** < 90
83 ≤ **B** < 87
80 ≤ **B-** < 83
77 ≤ **C+** < 80
73 ≤ **C** < 77
70 ≤ **C-** < 73
67 ≤ **D+** < 70
63 ≤ **D** < 67
60 ≤ **D-** < 63
0 ≤ **F** < 60

Requirements for Credit-Only (S/U) Grading

In order to receive a grade of S, students are required to take all exams and quizzes, complete all assignments, and earn a grade of C- or better. Conversion from letter grading to credit

only (S/U) grading is subject to university deadlines. Refer to the Registration and Records calendar for deadlines related to grading. For more details refer to http://policies.ncsu.edu/regulation/reg-02-20-15.

Requirements for Auditors (AU)

Information about and requirements for auditing a course can be found at http://policies.ncsu.edu/regulation/reg-02-20-04.

The grade of "AU" will be awarded to students who take all exams and earn a 60% or higher average on all of the exams. Auditors are required to meet with the instructor during the first two weeks of the course.

Policies on Incomplete Grades

If an extended deadline is not authorized by the instructor or department, an unfinished incomplete grade will automatically change to an F after either (a) the end of the next regular semester in which the student is enrolled (not including summer sessions), or (b) the end of 12 months if the student is not enrolled, whichever is shorter. Incompletes that change to F will count as an attempted course on transcripts. The burden of fulfilling an incomplete grade is the responsibility of the student. The university policy on incomplete grades is located at http://policies.ncsu.edu/regulation/reg-02-50-3.

Late Assignments

There is a 48-hour late window for tutorial and programming project submissions, except for Design Proposals. You will lose 1 point for every 2 hours the project is late, up to 24 points. No submissions will be accepted after the 48-hour late window without a university excused absence.

Exercises will not be accepted late. You will not receive credit for an exercise if the timestamp is later than 5pm on the day the exercise was assigned or if the exercise is submitted after an assigned deadline.

No late submissions will be accepted through email.

Attendance Policy

For complete attendance and excused absence policies, please see http://policies.ncsu.edu/regulation/reg-02-20-03

Attendance Policy

Attendance to lecture and lab is mandatory!

Absences Policy

Excused absences are defined in the NC State Academic Policy on Attendance Regulations (http://policies.ncsu.edu/regulation/reg-02-20-03). **Documentation of the absence is required to excuse an absence.**

- Exam makeups will only be given with a documented excused absence.
- Project extensions will only be given with a documented excused absence. If the project solution has already been released (in the case of teaching staff designs) an alternative assignment may be assigned.
- Exercise waivers will only be given with a documented excused absence.
- Lab makeups will only be allowed with a documented excused absence.

All anticipated absences must be presented to the instructor no later than one week before the absence. All emergency absences must be turned in no later than one week after the student's return date. All other absences will be unexcused.

A maximum of 4 class periods per semester may be missed due to excused absences. Any number of excused absences beyond four will only be allowed with special permission of the instructor.

If you miss more than 4 lectures during the semester with an unexcused absence, a **5 point penalty** will be applied to **your final grade**. Missing a lab with an unexcused absence will result in a **zero for that lab**, even if you complete the lab work outside of lab.

Makeup Work Policy

All projects and exams must be made up within one to two weeks of the absence and the timeframe will be determined through discussion between the instructor and student. If a project has moved forward in such a way that the missed project cannot be completed, the instructor may request the student to complete an alternative assignment. No exercises will be made up.

Additional Excuses Policy

None.

Academic Integrity

Academic Integrity

Students are required to comply with the university policy on academic integrity found in the Code of Student Conduct found at http://policies.ncsu.edu/policy/pol-11-35-01

All work that you turn in for grading must be your own! This means that all work must be an independent and individual creation by you or in the case of paired/team assignments; all work must be an independent and individual creation by you and your assigned partner or assigned teammates. Any attempt to gain an unfair advantage in grading, whether for yourself or another, is a violation of academic integrity. You may only work on an assignment with another student(s) in the class if explicitly stated in the assignment.

Students who cheat on a homework, exercise, or exam will receive a -100 for the assignment!!!

Cheating is worse than not turning in the assignment. All cases of academic misconduct will be reported to the Office of Student Conduct. A first offense will place the student on *Academic Probation* for the remainder of their academic career. A student's status on *Academic Probation* **may** affect financial aid and be reported to groups that request the information from the Office of Student Conduct, like Park Scholars, ROTC, graduate schools, employers, etc.

The Computer Science department uses software that detects cheating violations for programming projects. Do not use other student's code, do not share your code, do not copy or use code from someone who took the class X semesters ago, do not use code from online.

The only people that you MAY receive help from are your instructor, the TA(s) for CSC216, and for paired/team assignments, you may receive help from your assigned partner or your assigned teammates. For exercises, you may work with any of your neighbors that are physically present in class. You may use any of the resources provided by the teaching staff on the course website.

You MAY also reference your textbook, the textbook website, the Java API, and other third party APIs as appropriate for an assignment (for example, you may use the JUnit API to help you with writing JUnit tests).

You MAY NOT receive help from anyone or anything else.

Examples of Cheating (this list is NOT exhaustive):

- It is cheating to give any student access to any of your work which you have completed for individual class assignments.
- It is cheating AND plagiarism to use another person's work and claim it as your own. You are expected to complete all assignments on your own, unless otherwise specified in the assignment.
- It is cheating to interfere with another student's use of computing resources or to circumvent system security.
- It is cheating to email, ftp, post on the Internet, bulletin boards, message boards, etc. your work for others to obtain. Do NOT use sites that allow you to "anonymously" post code. Those sites are searchable, and others may find your code (like the teaching staff).
- It is cheating to ask or pay another person or persons to complete an assignment for you.
- It is cheating AND plagiarism to decompile any compiled code and use the decompiled source code as your own. You may also break the law by decompiling code.
- It is cheating AND plagiarism to use code that you find online.
- It is cheating to give another student access to your account (NC State account or others that you use for university work) or to give them your account password.
- It is cheating for you and another student to work collaboratively on an assignment, unless otherwise specified by the assignment.
- to circumvent the intention of the assignment and/or the automated grading system (e.g., by hardcoding test case solutions).

Examples of NOT Cheating (this list is NOT exhaustive):

- Using the code from the class website (with citations in the comments).
- Using code from other programs YOU wrote.
- Using code from other programs that YOU and a partner wrote as part of assigned exercises.
- Help from TAs or instructor (with citations in the comments).
- Using code from the textbook or textbook website (with citations in the comments).

Example Citations

/* (In method or class level comments)

* I received help from Dr. Heckman on *date* during her office hours. We discussed X.

*/

/*

* The code for this method is based on Exercise Y that I completed with Z on date.

*/

Protecting Yourself

- Do not leave papers lying around your workstation.
- Do not dispose of important papers in the lab recycling bins and trash cans until after the assignment is graded.
- Do not give out your password.
- Do not leave your workstation unattended or forget to log yourself out.
- Do not leave your laptop unattended.

- Do not give other students access to any of your workspace or email them any code.
- Do not give other students access to your course materials or your personal computer.
- Do not email, ftp, or post your code on the Internet, message boards, etc.
- Keep all copies of final an intermediate work until after the assignment is graded.
- Keep all graded assignments until after you receive the final grade for the course.
- Do not discuss implementation details of the assignment with your peers.

Forum Use

The forum is available to ask questions about assignments and tests. **Do NOT post any code to the forum!** The teaching staff reserves the right to edit any student's forum post for inappropriate content.

Posting Code

While your deliverable is your work, the project requirements and design are the intelectual property of the instructors and the university. You may not post a project solution to a public code repository during or after the semester.

Academic Honesty

See http://policies.ncsu.edu/policy/pol-11-35-01 for a detailed explanation of academic honesty.

None.

Honor Pledge

Your name on any test or assignment **or** the electronic submission of an assignment through Moodle or other class courseware system indicates, "I have neither given nor received unauthorized aid on this test or assignment."

Electronically-Hosted Course Components

Students may be required to disclose personally identifiable information to other students in the course, via electronic tools like email or web-postings, where relevant to the course. Examples include online discussions of class topics, and posting of student coursework. All students are expected to respect the privacy of each other by not sharing or using such information outside the course.

Electronically-hosted Components: The following materials are electronically-hosted for use by students through a combination of Moodle, Wolfware Classic, Google Docs (through NC State), GitHub, Jenkins, and Piazza: lecture notes, message boards, electronic submission of assignments, electronic submission of exercises.

Accommodations for Disabilities

Reasonable accommodations will be made for students with verifiable disabilities. In order to take advantage of available accommodations, student must register with the Disability Services Office (http://www.ncsu.edu/dso), 919-515-7653. For more information on NC State's policy on working with students with disabilities, please see the Academic Accommodations for Students with Disabilities Regulation at http://policies.ncsu.edu/regulation/reg-02-20-01.

Non-Discrimination Policy

NC State University provides equality of opportunity in education and employment for all students and employees. Accordingly, NC State affirms its commitment to maintain a work environment for all employees and an academic environment for all students that is free from all forms of discrimination. Discrimination based on race, color, religion, creed, sex, national origin, age, disability, veteran status, or sexual orientation is a violation of state and federal law and/or NC State University policy and will not be tolerated. Harassment of any person (either in the form of quid pro quo or creation of a hostile environment) based on race, color, religion, creed, sex, national origin, age, disability, veteran status, or sexual orientation also is a violation of state and federal law and/or NC State University policy and will not be tolerated. Retaliation against any person who complains about discrimination is also prohibited. NC State's policies and regulations covering discrimination, harassment, and retaliation may be accessed at http://policies.ncsu.edu/policy/pol-04-25-05 or http://www.ncsu.edu/equal_op/. Any person who feels that he or she has been the subject of prohibited discrimination, harassment, or retaliation should contact the Office for Equal Opportunity (OEO) at 919-515-3148.

Course Schedule

NOTE: The course schedule is subject to change.

Lecture TH 2:20pm - 3:35pm — OO Review and Composition — 8/18/2016 - 8/18/2016

OO Review and Composition

Lab MTW Varies by lab section - Varies by lab section — Lab 1: InstallFest and Pair Programming — 8/22/2016 - 8/24/2016

Lab 1: InstallFest and Pair Programming

Lecture TH 2:20pm - 3:35pm — Software Testing — 8/23/2016 - 8/23/2016

Software Testing

Software Engineering Best Practices — 8/25/2016 - 8/25/2016

Software Engineering Best Practices

Lab MTW Varies by lab section - Varies by lab section — Lab 2: Software Testing and Best Practices — 8/29/2016 - 8/31/2016

Lab 2: Software Testing and Best Practices

Lecture TH 2:20pm - 3:35pm — Java Collections — 8/30/2016 - 8/30/2016

Java Collections

Lecture TH 2:20pm - 3:35pm — Inheritance and Polymorphism — 9/1/2016 - 9/1/2016

Inheritance and Polymorphism

Lecture TH 2:20pm - 3:35pm — Abstract Classes and Interfaces — 9/6/2016 - 9/6/2016

Abstract Classes and Interfaces

Lecture TH 2:20pm - 3:35pm — Exceptions and Libraries — 9/8/2016 - 9/8/2016

Exceptions and Libraries

Lab MTW Varies by lab section - Varies by lab section — Lab 3: Collections — 9/12/2016 - 9/14/2016

Lab 3: Collections

Lecture TH 2:20pm - 3:35pm — Design and Patterns — 9/13/2016 - 9/15/2016

Design and Patterns

Lecture TH 2:20pm - 3:35pm — Software Lifecycle and Task Planning — 9/15/2016 - 9/15/2016

Software Lifecycle and Task Planning

Lab MTW Varies by lab section - Varies by lab section — Lab 4: Design — 9/19/2016 - 9/21/2016

Lab 4: Design

Lecture TH 2:20pm - 3:35pm — Finite State Machines — 9/20/2016 - 9/22/2016

Finite State Machines

Lecture TH 2:20pm - 3:35pm — Finite State Machines and the State Pattern — 9/22/2016 - 9/22/2016

Finite State Machines and the State Pattern

Lab MTW Varies by lab section - Varies by lab section — Lab 5: Inspections — 9/19/2016 - 9/28/2016

Lab 5: Inspections

Lecture TH 2:20pm - 3:35pm — Exam 1 — 9/27/2016 - 9/27/2016

Exam 1: The exam will cover all materials in the course up through the Finite State Machines and State Pattern lecture.

Lecture TH 2:20pm - 3:35pm — Array Lists 1 — 9/29/2016 - 9/29/2016

Array Lists 1

Lecture TH 2:20pm - 3:35pm — Lab 6: Finite State Machines — 10/3/2016 - 10/5/2016

Lab 6: Finite State Machines

Lecture TH 2:20pm - 3:35pm — Array Lists 2 — 10/4/2016 - 10/4/2016

Array Lists 2

Lab MTW Varies by lab section - Varies by lab section — Lab 7: Array Lists — 10/10/2016 - 10/12/2016

Lab 7: Array Lists

Lecture TH 2:20pm - 3:35pm — Linked Lists 1 — 10/11/2016 - 10/11/2016

Linked Lists 1

Lecture TH 2:20pm - 3:35pm — Linked Lists 2 — 10/13/2016 - 10/13/2016

Linked Lists 2

Lab MTW Varies by lab section - Varies by lab section — Lab 8: Linked Lists — 04/04/2013 - 04/04/2013

Lab 8: Linked Lists

Lecture TH 2:20pm - 3:35pm — Stacks — 10/18/2016 - 10/18/2016

Stacks

Lecture TH 2:20pm - 3:35pm — Queues — 10/20/2016 - 10/20/2016

Queues

Lab MTW Varies by lab section - Varies by lab section — Lab 9: Stacks and Queues — 10/24/2016 - 10/26/2016

Lab 9: Stacks and Queues

Lecture TH 2:20pm - 3:35pm — Exam 2 — 10/25/2016 - 10/25/2016

Exam 2: The exam will cover all materials in the course up through the Queues lecture.

Lecture TH 2:20pm - 3:35pm — Iterators and Inner Classes — 10/27/2016 - 10/27/2016

Iterators and Inner Classes

Lab MTW Varies by lab section - Varies by lab section — Lab 10: Iterators — 10/31/2016 - 11/2/2016

Lab 10: Iterators

Lecture TH 2:20pm - 3:35pm — Recursion — 11/1/2016 - 11/1/2016

Recursion

Lecture TH 2:20pm - 3:35pm — Recursion and Lists — 11/3/2016 - 11/3/2016

Recursion and Lists

Lab MTW Varies by lab section - Varies by lab section — Lab 11: Recursion and Lists — 11/7/2016 - 11/9/2016

Lab 11: Recursion and Lists

Lecture TH 2:20pm - 3:35pm — GUI View — 11/8/2016 - 11/8/2016

GUI View

Lecture TH 2:20pm - 3:35pm — GUI Controller — 11/10/2016 - 11/10/2016

GUI Controller

Lab MTW Varies by lab section - Varies by lab section — Lab 12: GUIs — 11/14/2016 - 11/16/2016

Lab 12: GUIs

Lecture TH 2:20pm - 3:35pm — Teaming — 11/15/2016 - 11/15/2016

Teaming

Lecture TH 2:20pm - 3:35pm — Searching — 11/17/2016 - 11/17/2016

Searching

Lecture TH 2:20pm - 3:35pm — Binary Search Trees — 11/22/2016 - 11/22/2016

Binary Search Trees

Lab MTW Varies by lab section - Varies by lab section — Lab 13: Non-Linear Data Structures — 11/28/2016 - 11/30/2016

Lab 13: Non-Linear Data Structures

Lecture TH 2:20pm - 3:35pm — Sorting — 11/29/2016 - 11/29/2016

Sorting

Lecture TH 2:20pm - 3:35pm — Exam Review — 12/1/2016 - 12/1/2016

Exam Review

Guided Project 1: Student Registration System — 8/18/2016 - 9/1/2016

Project is due at 3pm on the deadline. There's a 48 hour late window.

Guided Project 2: Course Management System — 9/1/2016 - 9/15/2016

Project is due at 3pm on the deadline. There's a 48 hour late window.

Project 1 Part 1 — 9/8/2016 - 9/22/2016

Project is due at 3pm on the deadline. There's a 48 hour late window. No Design Proposals and Rationales will be accepted late.

Project 1 Part 2 — 9/22/2016 - 10/13/2016

Project is due at 3pm on the deadline. There's a 48 hour late window.

Project 2 Part 1 — 9/29/2016 - 10/20/2016

Project is due at 3pm on the deadline. There's a 48 hour late window. No Design Proposals and Rationales will be accepted late.

Project 2 Part 2 — 10/20/2016 - 11/3/2016

Project is due at 3pm on the deadline. There's a 48 hour late window.

Project 3 Part 1 — 10/26/2016 - 11/10/2016

Project is due at 3pm on the deadline. There's a 48 hour late window. No Design Proposals and Rationales will be accepted late.

Project 3 Part 2 — 11/10/2016 - 12/1/2016

Project is due at 3pm on the deadline. There's a 48 hour late window.

Lecture TH 2:20pm - 3:35pm — Final Exam — TBD - TBD

The final exam will be from 1p-4pm in the normal classroom on TBD Date.

MAE 426 Course Syllabus

MAE 426 – Fundamentals of Product Design

Section TBD

SPRING 2016

3 Credit Hours

Course Description

Many think of design as more of an art than a science. However, the growing body of research in the engineering design community teaches us ways to navigate the design of consumer products using interdisciplinary design tools and rational decision making.

This course introduces students to scientific design techniques that are more effective than "ad hoc" tactics. By exploring how engineering principles integrate with "real world" design challenges, students will learn to solve product design problems that encompass heterogeneous markets, multiple disciplines, and large-scale complex systems.

Learning Outcomes

At the end of this class, you will have learned to approach design in a systematic way and will be able to:

- Identify and address customer needs in product design
- Select and apply appropriate techniques for capturing and representing the heterogeneous preferences of a consumer market
- Leverage customer preferences and requirements in models of demand
- Generate alternative solutions in a way that promotes creativity / innovation and usefulness
- Identify and establish the core components of a product
- Systematically compare alternative solutions and scientifically identify the best candidates
- Account for, and model, uncertainty in the design process
- Design a product when dealing with multiple disciplines and multiple objectives
- Identify and leverage the most effective product design strategies when designing for variety

Course Structure

The course will operate through a series on in-class lectures. While lectures are mainly run by the professor, there will be opportunities for group work and student-driven discussion. Assessment will be conducted through homework, a final exam, and a course project. The course project will have deliverables throughout the semester.

Instructors

Scott Ferguson (smfergu2) - *Instructor*
Email: scott_ferguson@ncsu.edu
Phone: 919-515-5231
Office Location: 3244 EBIII
Office Hours:

Tuesdays and Thursdays X:XX to X:XX
or by appointment

Course Meetings

None.

Course Materials

Textbooks

Product Design and Development - *Ulrich, K. T., and Eppinger, S. D*
Edition: 5th edition
Cost: $130
This textbook is optional.

Decision Making in Engineering Design - *Lewis, K. E., Chen, W., and Schmidt, L. C.*
Edition: 1st edition
Cost: $113
This textbook is optional.

Product Design: Techniques in Reverse Engineering and New Product Development - *Otto, K., and Wood, K.*
Edition: 1st
Cost: $142
This textbook is optional.

Expenses

None.

Materials

None.

Requisites and Restrictions

Prerequisites

MA 241

Co-requisites

None.

Restrictions

None.

General Education Program (GEP) Information

GEP Category

This course does not fulfill a General Education Program category.

GEP Co-requisites

This course does not fulfill a General Education Program co-requisite.

Transportation

This course will not require students to provide their own transportation. Non-scheduled class time for field trips or out-of-class activities is NOT required for this class.

Safety & Risk Assumptions

None.

Grading

Grade Components

Component	Weight	Details
Homework	**25**	
Final	**35**	
Design project (multiple deliverables)	**40**	

Requirements for Credit-Only (S/U) Grading

In order to receive a grade of S, students are required to take all exams and quizzes, complete all assignments, and earn a grade of C- or better. Conversion from letter grading to credit only (S/U) grading is subject to university deadlines. Refer to the Registration and Records calendar for deadlines related to grading. For more details refer to http://policies.ncsu.edu/regulation/reg-02-20-15.

Requirements for Auditors (AU)

Information about and requirements for auditing a course can be found at http://policies.ncsu.edu/regulation/reg-02-20-04.

Policies on Incomplete Grades

If an extended deadline is not authorized by the instructor or department, an unfinished incomplete grade will automatically change to an F after either (a) the end of the next regular semester in which the student is enrolled (not including summer sessions), or (b) the end of 12 months if the student is not enrolled, whichever is shorter. Incompletes that change to F will count as an attempted course on transcripts. The burden of fulfilling an incomplete grade is the responsibility of the student. The university policy on incomplete grades is located at http://policies.ncsu.edu/regulation/reg-02-50-3.

Late Assignments

Late assignments will not be accepted unless there is a compelling reason as to why the assignment is late.

Attendance Policy

For complete attendance and excused absence policies, please see http://policies.ncsu.edu/regulation/reg-02-20-03

Attendance Policy

None.

Absences Policy

None.

Makeup Work Policy

None.

Additional Excuses Policy

None.

Academic Integrity

Academic Integrity

Students are required to comply with the university policy on academic integrity found in the Code of Student Conduct found at http://policies.ncsu.edu/policy/pol-11-35-01

None.

Academic Honesty

See http://policies.ncsu.edu/policy/pol-11-35-01 for a detailed explanation of academic honesty.

None.

Honor Pledge

Your signature on any test or assignment indicates "I have neither given nor received unauthorized aid on this test or assignment."

Electronically-Hosted Course Components

Students may be required to disclose personally identifiable information to other students in the course, via electronic tools like email or web-postings, where relevant to the course. Examples include online discussions of class topics, and posting of student coursework. All students are expected to respect the privacy of each other by not sharing or using such information outside the course.

Accommodations for Disabilities

Reasonable accommodations will be made for students with verifiable disabilities. In order to take advantage of available accommodations, student must register with the Disability Services Office (http://www.ncsu.edu/dso), 919-515-7653. For more information on NC State's policy on working with students with disabilities, please see the Academic Accommodations for Students with Disabilities Regulation at http://policies.ncsu.edu/regulation/reg-02-20-01.

Non-Discrimination Policy

NC State University provides equality of opportunity in education and employment for all students and employees. Accordingly, NC State affirms its commitment to maintain a work environment for all employees and an academic environment for all students that is free from all forms of discrimination. Discrimination based on race, color, religion, creed, sex, national origin, age, disability, veteran status, or sexual orientation is a violation of state and federal law and/or NC State University policy and will not be tolerated. Harassment of any person (either in the form of quid pro quo or creation of a hostile environment) based on race, color, religion, creed, sex, national origin, age, disability, veteran status, or sexual orientation also is a violation of state and federal law and/or NC State University policy and will not be tolerated. Retaliation against any person who complains about discrimination is also prohibited. NC State's policies and regulations covering discrimination, harassment,

and retaliation may be accessed at http://policies.ncsu.edu/policy/pol-04-25-05 or http://www.ncsu.edu/equal_op/. Any person who feels that he or she has been the subject of prohibited discrimination, harassment, or retaliation should contact the Office for Equal Opportunity (OEO) at 919-515-3148.

Course Schedule

NOTE: The course schedule is subject to change.

Week 1 — TBD - TBD

Introduction to the Course

What is product design and systems-level thinking?

Exploring the product development process

Course Project Introduced

Week 2 — TBD - TBD

Marketing / Engineering Domain

Generating requirements lists

Elements of a product architecture

Kano Model

Identifying customer needs

Week 3 — TBD - TBD

Marketing / Engineering Domain

Modeling deamnd and estimating market size

Homework 1 Assigned

Week 4 — TBD - TBD

Marketing / Engineering Domain

Discrete choice theory in engineering product design

Week 5 — TBD - TBD

Marketing / Engineering Domain

Discrete choice theory in engineering product design

Homework 2 Assigned

Project Deliverable Due

Week 6 — TBD - TBD

Engineering Domain

Principles driving innovation and creativity

Brainstorming techniques

Week 7 — TBD - TBD

Engineering Domain

Understanding functional relationships

Establishing a product architecture

Homework 3 Assigned

Week 8 — TBD - TBD

Engineering Domain

Concept selection tools and limitations

Decision traps and mult-attribute utility theory

Homework 4 Assigned

Project Deliverable Due

Week 9 — TBD - TBD

Engineering Domain

Limitations of modeling

Impact of model scales

Week 10 — TBD - TBD

Engineering / Manufacturing Domains

Establishing a product platform

Modeling uncertainty in engineering design problems

Week 11 — TBD - TBD

Engineering / Manufacturing Domains

Modeling uncertainty in engineering design problems

Ramifications of uncertainty in engineering design problems

Homework 5 Assigned

Week 12 — TBD - TBD

Engineering / Manufacturing Domains

Multiple designers, multiple disciplines, and multiple objectives

Week 13 — TBD - TBD

Engineering / Manufacturing Domains

Game theory in engineering design

Design of complex engineered systems

Homework 6 Assigned

Project Deliverable Due

Week 14 — TBD - TBD

Emerging areas

Design for variety and product customization

Week 15 — TBD - TBD

Emerging areas

Design of sustainable products

Week 16 — TBD - TBD

Emerging areas

Design for the developing world

Final exam — TBD - TBD

Final exam

MAE 526 Course Syllabus

MAE 526 – Fundamentals of Product Design

Section TBD

SPRING 2016

3 Credit Hours

Course Description

Many think of design as more of an art than a science. However, the growing body of research in the engineering design community teaches us ways to navigate the design of consumer products using interdisciplinary design tools and rational decision making.

This course introduces students to scientific design techniques that are more effective than "ad hoc" tactics. By exploring how engineering principles integrate with "real world" design challenges, students will learn to solve product design problems that encompass heterogeneous markets, multiple disciplines, and large-scale complex systems.

Learning Outcomes

At the end of this class, you will have learned to approach design in a systematic way and will be able to:

- Identify and address customer needs in product design
- Select and apply appropriate techniques for capturing and representing the heterogeneous preferences of a consumer market
- Leverage customer preferences and requirements in models of demand
- Generate alternative solutions in a way that promotes creativity / innovation and usefulness
- Identify and establish the core components of a product
- Systematically compare alternative solutions and scientifically identify the best candidates
- Account for, and model, uncertainty in the design process
- Design a product when dealing with multiple disciplines and multiple objectives
- Identify and leverage the most effective product design strategies when designing for variety

Course Structure

The course will operate through a series on in-class lectures. While lectures are mainly run by the professor, there will be opportunities for group work and student-driven discussion. Assessment will be conducted through homework, a final exam, and a course project. The course project will have deliverables throughout the semester.

Instructors

Scott Ferguson (smfergu2) - *Instructor*
Email: scott_ferguson@ncsu.edu
Phone: 919-515-5231
Office Location: 3244 EBIII
Office Hours:

Tuesdays and Thursdays X:XX to X:XX
or by appointment

Course Meetings

None.

Course Materials

Textbooks

Product Design and Development - *Ulrich, K. T., and Eppinger, S. D*
Edition: 5th edition
Cost: $130
This textbook is optional.

Decision Making in Engineering Design - *Lewis, K. E., Chen, W., and Schmidt, L. C.*
Edition: 1st edition
Cost: $113
This textbook is optional.

Product Design: Techniques in Reverse Engineering and New Product Development - *Otto, K., and Wood, K.*
Edition: 1st
Cost: $142
This textbook is optional.

Expenses

None.

Materials

None.

Requisites and Restrictions

Prerequisites

Graduate standing required

Co-requisites

None.

Restrictions

None.

General Education Program (GEP) Information

GEP Category

This course does not fulfill a General Education Program category.

GEP Co-requisites

This course does not fulfill a General Education Program co-requisite.

Transportation

This course will not require students to provide their own transportation. Non-scheduled class time for field trips or out-of-class activities is NOT required for this class.

Safety & Risk Assumptions

None.

Grading

Grade Components

Component	Weight	Details
Homework	**20**	
Final	**30**	
Design project (multiple deliverables)	**35**	
Research paper	**15**	

Requirements for Credit-Only (S/U) Grading

Performance in research, seminar and independent study types of courses (6xx and 8xx) is evaluated as either "S" (Satisfactory) or "U" (Unsatisfactory), and these grades are not used in computing the grade point average. For credit only courses (S/U) the requirements necessary to obtain the grade of "S" must be clearly outlined.

Requirements for Auditors (AU)

Information about and requirements for auditing a course can be found at http://policies.ncsu.edu/regulation/reg-02-20-04.

Policies on Incomplete Grades

If an extended deadline is not authorized by the Graduate School, an unfinished incomplete grade will automatically change to an F after either (a) the end of the next regular semester in which the student is enrolled (not including summer sessions), or (b) by the end of 12 months if the student is not enrolled, whichever is shorter. Incompletes that change to F will count as an attempted course on transcripts. The burden of fulfilling an incomplete grade is the responsibility of the student. The university policy on incomplete grades is located at http://policies.ncsu.edu/regulation/reg-02-50-03. Additional information relative to incomplete grades for graduate students can be found in the Graduate Administrative Handbook in Section 3.18.F at http://www.fis.ncsu.edu/grad_publicns/handbook/

Late Assignments

Late assignments will not be accepted unless there is a compelling reason as to why the assignment is late.

Attendance Policy

For complete attendance and excused absence policies, please see http://policies.ncsu.edu/regulation/reg-02-20-03

Attendance Policy

None.

Absences Policy

None.

Makeup Work Policy

None.

Additional Excuses Policy

None.

Academic Integrity

Academic Integrity

Students are required to comply with the university policy on academic integrity found in the Code of Student Conduct found at http://policies.ncsu.edu/policy/pol-11-35-01

None.

Academic Honesty

See http://policies.ncsu.edu/policy/pol-11-35-01 for a detailed explanation of academic honesty.

None.

Honor Pledge

Your signature on any test or assignment indicates "I have neither given nor received unauthorized aid on this test or assignment."

Electronically-Hosted Course Components

Students may be required to disclose personally identifiable information to other students in the course, via electronic tools like email or web-postings, where relevant to the course. Examples include online discussions of class topics, and posting of student coursework. All students are expected to respect the privacy of each other by not sharing or using such information outside the course.

Accommodations for Disabilities

Reasonable accommodations will be made for students with verifiable disabilities. In order to take advantage of available accommodations, student must register with the Disability Services Office (http://www.ncsu.edu/dso), 919-515-7653. For more information on NC State's policy on working with students with disabilities, please see the Academic Accommodations for Students with Disabilities Regulation at http://policies.ncsu.edu/regulation/reg-02-20-01.

Non-Discrimination Policy

NC State University provides equality of opportunity in education and employment for all students and employees. Accordingly, NC State affirms its commitment to maintain a work environment for all employees and an academic environment for all students that is free from all forms of discrimination. Discrimination based on race, color, religion, creed, sex, national origin, age, disability, veteran status, or sexual orientation is a violation of state and federal law and/or NC State University policy and will not be tolerated. Harassment of

any person (either in the form of quid pro quo or creation of a hostile environment) based on race, color, religion, creed, sex, national origin, age, disability, veteran status, or sexual orientation also is a violation of state and federal law and/or NC State University policy and will not be tolerated. Retaliation against any person who complains about discrimination is also prohibited. NC State's policies and regulations covering discrimination, harassment, and retaliation may be accessed at http://policies.ncsu.edu/policy/pol-04-25-05 or http://www.ncsu.edu/equal_op/. Any person who feels that he or she has been the subject of prohibited discrimination, harassment, or retaliation should contact the Office for Equal Opportunity (OEO) at 919-515-3148.

Course Schedule

NOTE: The course schedule is subject to change.

Week 1 — TBD - TBD

Introduction to the Course

What is product design and systems-level thinking?

Exploring the product development process

Course Project Introduced

Week 2 — TBD - TBD

Marketing / Engineering Domain

Generating requirements lists

Elements of a product architecture

Kano Model

Identifying customer needs

Week 3 — TBD - TBD

Marketing / Engineering Domain

Modeling deamnd and estimating market size

Homework 1 Assigned

Week 4 — TBD - TBD

Marketing / Engineering Domain

Discrete choice theory in engineering product design

Week 5 — TBD - TBD

Marketing / Engineering Domain

Discrete choice theory in engineering product design

Homework 2 Assigned

Project Deliverable Due

Week 6 — TBD - TBD

Engineering Domain

Principles driving innovation and creativity

Brainstorming techniques

Week 7 — TBD - TBD

Engineering Domain

Understanding functional relationships

Establishing a product architecture

Homework 3 Assigned

Week 8 — TBD - TBD

Engineering Domain

Concept selection tools and limitations

Decision traps and mult-attribute utility theory

Homework 4 Assigned

Project Deliverable Due

Week 9 — TBD - TBD

Engineering Domain

Limitations of modeling

Impact of model scales

Week 10 — TBD - TBD

Engineering / Manufacturing Domains

Establishing a product platform

Modeling uncertainty in engineering design problems

Week 11 — TBD - TBD

Engineering / Manufacturing Domains

Modeling uncertainty in engineering design problems

Ramifications of uncertainty in engineering design problems

Homework 5 Assigned

Week 12 — TBD - TBD

Engineering / Manufacturing Domains

Multiple designers, multiple disciplines, and multiple objectives

Week 13 — TBD - TBD

Engineering / Manufacturing Domains

Game theory in engineering design

Design of complex engineered systems

Homework 6 Assigned

Project Deliverable Due

Week 14 — TBD - TBD

Emerging areas

Design for variety and product customization

Week 15 — TBD - TBD

Emerging areas

Design of sustainable products

Week 16 — TBD - TBD

Emerging areas

Design for the developing world

Final exam — TBD - TBD

Final exam

DRAFT Goodnight Scholars First Year Seminar
USC 250-001
Fridays 3:00-4:50 PM
Room 200, Park Shops

Instructors:

Allison Medlin: ajmedlin@ncsu.edu, 919-515-7485
Jason Perry: jdperry3@ncsu.edu, 919-515-9659

Teaching Assistants:

Nicole Ditillo: nmditill@ncsu.edu

Course Overview:

This seminar will provide an introduction to the expectations, goals, and community of the Goodnight Scholars Program. Emphasis is on professional development, group collaboration, interdisciplinary teamwork among STEM and Education majors, problem exploration, and civic responsibility.

Learning Outcomes:

As a result of this course, students will be able to:

- Demonstrate critical thinking, writing, and presentation skills necessary for academic and professional achievement.
- Identify leadership strengths necessary for personal, academic and professional success.
- Participate in leadership and group collaboration activities with practical application for future academic, social, and professional aspirations.
- Demonstrate a commitment to civic responsibilities, social issues, and self in community.
- Articulate current issues in the STEM and STEM Education fields.
- Have established personal and professional relationships with fellow Goodnight Scholars, NC State faculty/staff, and STEM and STEM Education professionals.

Course Structure:

This is a seminar-style course that meets once per week, eight times throughout the semester. The class time will be used for presentations and discussions with Goodnight Scholars Program staff, university faculty and staff, and industry partners. Time will also be set aside for small group collaboration activities, and one week will be a field trip.

Course Policies:

Students are expected to arrive on time and be fully prepared each week. Active participation in discussions and group collaboration activities is required. Cell phones should be turned off and put away. Nametags should be worn.

Use of laptops, tablets, and other technology is permitted in class for note-taking or group activities only. Use of these items is not permitted during guest speakers and student presentations.

Grading:

This course is graded Satisfactory/Unsatisfactory (S/U) for 1 credit. Students must complete the following three requirements to receive a Satisfactory (S).

Component	Details
Attendance and participation	Students are expected to attend all class sessions. Active participation and preparation is required.
Team Presentation	Each team will deliver a brief 7-8 minute presentation of their "Discovery" phase, including their goals, research and findings. Feedback will be provided to each team from instructors and classmates.
Team Report	Each team will submit a report on their research during the "Discovery" phase and an analysis of their problem. This report will include the following elements: (1) Abstract: A brief 250-300 word overview of the problem to be addressed, steps taken to explore the problem, and any significant findings. (2) Team Roster: Each team member should provide a brief bio, description of their team role, and experience/interest in the problem. (3) Narrative Analysis: A 3-4 page narrative description of the problem the team explored, including: ● Why this problem is a problem, and how it specifically affects North Carolina. Include supporting data and use MLA or APA citation. ● The purpose and goals of your research ● The research process ● What you learned and any significant findings (4) Annotated Source List: A brief description of each person interviewed and other sources used.

Late Assignments:

Late assignments may be accepted at the discretion of the instructor in case of emergency or extenuating circumstances. Arrangements must be made with the instructor prior to the date the assignment is due.

Absences Policy:

Students are allowed one excused absence per semester. Students must notify the instructors of any anticipated absence at least one week in advance. However, in case of unexpected emergency, please

notify the instructors as soon as possible. Makeup work may be assigned at the discretion of the instructors.

Academic Integrity and Honesty:

Students are required to comply with the university policy on academic integrity listed in the Code of Student Conduct at http://policies.ncsu.edu/policy/pol-11-35-01.

See http://policies.ncsu.edu/policy/pol-11-35-01 for a detailed explanation of academic honesty.

Accommodations for Disabilities:

Reasonable accommodations will be made for students with verifiable disabilities. In order to take advantage of available accommodations, student must register with the Disability Services Office (http://www.ncsu.edu/dso), 919-515-7653. For more information on NC State's policy on working with students with disabilities, please see the Academic Accommodations for Students with Disabilities Regulation at http://policies.ncsu.edu/regulation/reg-02-20-01.

Non-Discrimination Policy:

NC State University provides equality of opportunity in education and employment for all students and employees. Accordingly, NC State affirms its commitment to maintain a work environment for all employees and an academic environment for all students that is free from all forms of discrimination. Discrimination based on race, color, religion, creed, sex, national origin, age, disability, veteran status, or sexual orientation is a violation of state and federal law and/or NC State University policy and will not be tolerated. Harassment of any person (either in the form of quid pro quo or creation of a hostile environment) based on race, color, religion, creed, sex, national origin, age, disability, veteran status, or sexual orientation also is a violation of state and federal law and/or NC State University policy and will not be tolerated. Retaliation against any person who complains about discrimination is also prohibited. NC State's policies and regulations covering discrimination, harassment, and retaliation may be accessed at http://policies.ncsu.edu/policy/pol-04-25-05 or http://www.ncsu.edu/equal_op/. Any person who feels that he or she has been the subject of prohibited discrimination, harassment, or retaliation should contact the Office for Equal Opportunity (OEO) at 919-515-3148.

Draft Course Schedule:

NOTE: The course schedule is subject to change.

Pre-class meeting: 2015 Goodnight Scholars Retreat
During today's meeting, we will introduce the Goodnight Scholars First Year Seminar. We will discuss the purpose and design of the course, review the syllabus and expectations, and answer any questions.

Week 1: Understanding Your Strengths
Do you have the opportunity to do what you do best every day? Learn how your talents can help you develop personally and professionally. Through StrengthsQuest, you'll gain insight into your areas of greatest potential: the things that you naturally do best. StrengthsQuest is not a career assessment and it won't tell you what job or career you should do. But it does provide valuable information about who you are and gives you clues to the type of work environment in which you are most likely to thrive.

Due: Take the StrengthsQuest inventory prior to class

Week 2: Problem Identification and Exploration
How do you identify and narrow down a problem for your group project? Jennifer Capps, Director of Undergraduate Programs for the NC State Entrepreneurship Initiative, will guide us through the discovery phase of problem identification and exploration. In the second half of class, students will receive their group assignments and meet with their teams for the first time.

Due: Read "Reclaim Your Creative Confidence" prior to class and bring your puzzle piece.

Week 3: Finding and Organizing Resources
This week, Anne Burke (amburke5@ncsu.edu), Undergraduate Instruction and Outreach Librarian at NC State Libraries, will discuss critically evaluating resources and managing information. In the second half of class, your team will have time to evaluate your current resources and discuss next steps.

Week 4: Creating Interview Questions and Conducting Interviews
Today's session will focus on how to craft effective interview questions for your project, as well as guidelines for conducting interviews.

Week 5: Field Trip: SAS Institute
SAS Institute, recognized by Forbes Magazine as one of the best places to work in the United States, is home to some of North Carolina's smartest and most successful professionals. Join your fellow Goodnight Scholars for a personal tour of the impressive SAS Institute campus facilitated by Dr. Jim Goodnight himself. After the tour, you'll sit down and learn from many of SAS Institute's seasoned professionals on how they successfully collaborate across a large corporate environment.

Week 6: Group Collaboration and Planning
Today's session will be reserved for teams to meet in class and finalize their research plans and assignments.

Week 7: Enhancing Your Public Speaking Skills
Toastmaster's International is one of the world's leading organizations for leadership and communication development. Mr. Daryl Theis, senior market manager at BASF and member of Raleigh Toastmasters Club 843, will lead a public speaking workshop for scholars in preparation for their team presentations.

Week 8: Discovery Phase Presentations
During today's class, the teams will present their findings from the "Discovery" phase of their proposal development. Instructors and classmates will offer feedback.

Due: Team Reports

DRAFT Goodnight Scholars First Year Seminar
USC 251-001
Fridays 3:00-4:50 PM
Room 200, Park Shops

Instructors:

Allison Medlin: ajmedlin@ncsu.edu, 919-515-7485
Jason Perry: jdperry3@ncsu.edu, 919-515-9659

Teaching Assistants:

Nicole Ditillo: nmditill@ncsu.edu

Course Overview:

This seminar will provide an introduction to the expectations, goals, and community of the Goodnight Scholars Program. Emphasis is on professional development, team collaboration, interdisciplinary teamwork among STEM and STEM Education majors, problem exploration, and civic responsibility.

As a result of this course, students will be able to:

- Demonstrate critical thinking, writing, and presentation skills necessary for academic and professional achievement.
- Identify leadership strengths necessary for personal, academic and professional success.
- Participate in leadership and group collaboration activities with practical application for future academic, social, and professional aspirations.
- Demonstrate a commitment to civic responsibilities, social issues, and self in community.
- Articulate current issues in the STEM and STEM Education fields.
- Have established personal and professional relationships with fellow Goodnight Scholars, NC State faculty/staff, and STEM and STEM Education professionals.

Course Structure:

This is a seminar-style course that meets approximately once per week, **eight times** throughout the semester. The class time will be used for presentations and discussions with Goodnight Scholars Program staff, university faculty and staff, and industry partners. Time will also be set aside for small group collaboration activities, and one week will be a field trip.

Course Policies:

Students are expected to arrive on time and be fully prepared each week. Active participation in discussions and team collaboration activities is required. Cell phones should be turned off and put away. Nametags should be worn.

Use of laptops, tablets, and other technology is permitted in class for note-taking or team activities only. Use of these items is not permitted during guest speakers and student presentations.

Grading:

This course is graded Satisfactory/Unsatisfactory (S/U) for 1 credit. Students must complete the following three requirements to receive a Satisfactory (S).

Component	Details
Attendance and participation	Students are expected to attend all class sessions. Active participation and preparation is required.
Poster Presentation	1) Posters will be presented in a poster fair format during the last class. Posters will highlight the problem that your team explored and the strategy that your team proposes to address it, as well as relevant citations.
Minimum Viable Product	2) A minimum viable product (MVP) should describe the strategic vision that your team has for addressing the problem you have identified. MVPs may include a broad range of final "products," including, but not limited to: a prototype, sample curricula, video or other multimedia, proposal for future research, website or other web-based platforms, program description, etc. GS Pro Staff will be available to talk through your team's poster and MVP throughout the semester. **Abstract Due:** 300-450 word description of your proposed MVP, including resources needed and how it will be incorporated into your poster presentation. Due week 6. **Final Due:** Final MVPs may come in a broad array of formats. Teams must bring their MVPs to the poster session to be evaluated.

Late Assignments:

Late assignments may be accepted at the discretion of the instructor in case of emergency or extenuating circumstances. Arrangements must be made with the instructor prior to the date the assignment is due.

Absences Policy:

Students are allowed one excused absence per semester. Students must notify the instructors of any anticipated absence at least one week in advance. However, in case of unexpected emergency, please notify the instructors as soon as possible. Makeup work may be assigned at the discretion of the instructors.

Academic Integrity and Honesty:

Students are required to comply with the university policy on academic integrity listed in the Code of Student Conduct at http://policies.ncsu.edu/policy/pol-11-35-01.

See http://policies.ncsu.edu/policy/pol-11-35-01 for a detailed explanation of academic honesty.

Accommodations for Disabilities:

Reasonable accommodations will be made for students with verifiable disabilities. In order to take advantage of available accommodations, student must register with the Disability Services Office (http://www.ncsu.edu/dso), 919-515-7653. For more information on NC State's policy on working with students with disabilities, please see the Academic Accommodations for Students with Disabilities Regulation at http://policies.ncsu.edu/regulation/reg-02-20-01.

Non-Discrimination Policy:

NC State University provides equality of opportunity in education and employment for all students and employees. Accordingly, NC State affirms its commitment to maintain a work environment for all employees and an academic environment for all students that is free from all forms of discrimination. Discrimination based on race, color, religion, creed, sex, national origin, age, disability, veteran status, or sexual orientation is a violation of state and federal law and/or NC State University policy and will not be tolerated. Harassment of any person (either in the form of quid pro quo or creation of a hostile environment) based on race, color, religion, creed, sex, national origin, age, disability, veteran status, or sexual orientation also is a violation of state and federal law and/or NC State University policy and will not be tolerated. Retaliation against any person who complains about discrimination is also prohibited. NC State's policies and regulations covering discrimination, harassment, and retaliation may be accessed at http://policies.ncsu.edu/policy/pol-04-25-05 or http://www.ncsu.edu/equal_op/. Any person who feels that he or she has been the subject of prohibited discrimination, harassment, or retaliation should contact the Office for Equal Opportunity (OEO) at 919-515-3148.

Draft Course Schedule:

NOTE: The course schedule is subject to change.

Week 1: Spring Semester Overview & Case Studies in Strategy
This semester, we will focus on developing strategies to addressing the problems that your team explored in the fall. During this class session, we will discuss feedback from the previous semester and review the course syllabus and expectations. For the second half of class, we will examine case studies from social entrepreneurs around the world who are tackling social issues and proposing solutions to issues similar to those of your teams.

Week 2: Shaping the Strategy
During this class, Jennifer Capps, Director of Undergraduate Programs for the NC State Entrepreneurship Initiative, will provide an overview of project planning and tools for developing your strategy into a minimum viable product (MVP). In the second half of class, your team will map out a plan of work for the rest of the semester.

Reading for today's class: "Switch: Don't Solve Problem--Copy Success" by Dan & Chip Heath

Week 3: Building and Sustaining Community Partnerships
During this class, leaders from the public, private, and nonprofit sectors will talk about developing, maintaining, and facilitating good relationships across organizations to develop strategies that the meet the needs of North Carolinians across the state. In the second half of class, your team will have time to discuss and work on your project.

Week 4: Field Trip
During this class, we'll head to HQ Raleigh, a local hub for entrepreneurs seeking to make an impact on the economy and society.

Dress Code: Business casual. Please wear your Goodnight Scholars name tag.

Week 5: Group Collaboration and Planning
Today's session will be reserved for teams to meet in class and finalize their research plans and assignments.

Week 6: Preparing for Poster Presentations
Callie Womble, MPH, will discuss poster presentations and best practices in crafting a good poster. Final time in class can be used for discussion/work with your team.

Due: Abstract (300 - 450 words) of your team's proposed MVP by 5 pm.

Week 7: Presenting Your Strategy: Elevator Pitches
Prepare for your team's poster presentations next week during a workshop on pitching your strategy with Daryl Theis, senior market manager at BASF and member of Raleigh Toastmasters Club 843. Final time in class can be used for discussion/work with your team.

Week 8: Poster Session
Location: Caldwell Lounge
Present your work for the semester during this interactive poster session. During this session, your classmates, upperclass Goodnight Scholars, and other NC State community members will have the opportunity to view your posters and MVPs and ask questions about your semester projects.

Due: MVPs should be presented with your poster during the fair.

Minimum Viable Product

A minimum viable product (MVP) should describe the strategic vision that your group has for addressing the problem you have identified. MVPs may include a broad range of final "products", including, but not limited to: a hands on prototype, sample curricula, video or other multimedia, proposal for future research, website or other web-based platforms, etc. GS Pro Staff will advise your group on your MVP development over the course of the semester.

MVP Guidelines

There are a range of questions that your group must consider in order to create a strategy to address the problem you explored last semester. Answering these guiding questions as a group will help you to select the most appropriate format or "product" for the problem you have identified.

1) What is the problem that you are trying to address?
2) What is the most effective format for your "product"? Why is it the most effective? What other options could you consider?
3) What resources do you need in order to develop your "product"? Resources may include finances, time, people, materials, technology, political capital, etc.
4) Who is the target audience for the "product" you are developing? Why are they the most important audience? Who will this product impact?
5) Who needs to be a part of the strategy in order to be successful? What community partnerships will you need to utilize to make implementation successful?
6) Where will this "product" be implemented? Why?
7) Over what time period will this "product" be used? What is the timeline for development?
8) How would you determine if your "product" is effective?
9) What are some of the major barriers that you anticipate in implementation or product delivery? How do you plan to address them?

Product Presentation

Once your group has come to consensus regarding the above questions, you will develop a final "product" based on the problem and strategy that you have developed. Final products will be presented during the poster fair on **April 8**, in the format that the group has chosen.

- For example, if a group determines that a public health video about smoking cessation is the best strategy for addressing their problem, the group should create the video and make it available for viewing (on a laptop or Ipad) at the poster session.

MVP Grading Rubric

1) Does the "product" address the problem?
2) Is the "product" appropriate for the audience identified?
3) Is the "product" feasible?
4) Is the format of the "product" well-presented and creative?

Abstract Due Date: 03/18/2016 - 300 word description of your proposed MVP, including resources needed and how it will be incorporated into your poster presentation. This should be emailed to Dawn Culpepper (dkculpep@ncsu.edu) by 5 pm on Friday, March 18.

Final Due Date: 04/08/2016 - Final MVPs may come in a broad array of formats, but should be able to be presented at the poster fair on April 8.

Poster Presentation Guidelines

Posters will be presented in a poster fair session during the last class on April 8. Posters will highlight the problem your team explored and the strategy your team proposes to address it. Each team member should be prepared to answer questions about the contents of the poster and MVP.

Design Specifications

- Poster should be 24 inches x 36 inches (2 ft x 3 ft)
- Text should be **at least** 24 point in text, 36 for headings
- Posters can be created in common Microsoft Office Suite applications. We recommend using PPT slide and adjusting the size to meet the dimensions above.

Required Poster Elements

- Title & Presenters' Names
- Overview of the Problem: Summarize the problem that you seek to address, including the impact of the issue and populations affected. Why should we care about this problem?
- Strategy: Overview of your strategy, including why you chose it, the intended audience, possible community partners, and how it could be implemented. This section should include an overview of your MVP.
- Selected References: A list of the most important references used to develop the content of your poster.

Optional Poster Elements

- Many posters incorporate graphic elements such as photos, charts, or infographics. Make sure that any graphic elements are correctly attributed.

Poster Examples

- For an overview of poster presentations, please visit: https://www.ncsu.edu/project/posters/

Poster Presentation Grading Rubric

1) Does the poster include the required elements?
2) Is the information presented in a clear and organized format that is easy to understand and visually appealing?
3) Were team members knowledgeable and prepared to answer questions about the project, poster and MVP?
4) Did team member make a compelling argument for their proposed strategy?

Due Date: Posters must be emailed to Dawn Culpepper (dkculpep@ncsu.edu) by Monday, April 4 at 5 pm in order to be printed for the poster session on April 8. The GS Pro Staff will print your posters and set them up on April 8.

INTRODUCTION TO PSYCHOLOGY

PSY 200 Section 003
Spring 2015
MW 1:30-2:45 PM

Instructor:	Dr. Bob Pond	**Phone:**	515-1720
Office:	710 Poe Hall	**PSY Dept. Phone:**	515-2251
E-mail:	sbpond@ncsu.edu		
Office Hours:	Tues. 3:00-4:00 p.m.; Thurs. 9:00-10:00 a.m., and by appointment		

GTA:	Ms. Heather Perkins
Email:	hlperki2@ncsu.edu
Office:	738A Poe Hall
Office Hours:	Mon. 12:00-1:00 p.m.; Wed. 3:00-4:00 p.m. and by appointment

Moodle:

Links to on-line materials for this course are located at: http://moodle.wolfware.ncsu.edu

This Moodle currently has the following: study questions for the lecture material, an extensive lecture outline, links to interesting psychology-related web sites, and important class announcements. Please take a look at the Moodle soon!

NOTE: After the first day of class, information on the Moodle takes precedence over the information stated on the document you are now reading.

1. Virtual Office Visit:

I would really like to know a little bit about you and why you are taking PSY 200. Please visit me "virtually" by filling out an online form! (Click on VIRTUAL OFFICE VISIT! on the Moodle.) It should only take about 10-15 minutes to complete. Please do this within the next couple of days -- preferably by Friday 1/9 -- so that I can read about you soon.

Also, please feel free to come visit me at my office! I have posted my hours above. Send me an email to let me know that you are coming so that if for some reason I am unavailable we'll be able to set up another time to meet.

2. Textbook, "Clicker," and On-line Resources:

Textbook: The textbook we will be using is titled *Introduction to Psychology (10th Ed*) by J.W. Kalat.

"Clicker": You must purchase a ResponseCard RF (a.k.a. "clicker") that is compatible with TurningPoint receivers. Perhaps you have already used one of these clickers in another class because TurningPoint is the NCSU standard clicker system. I will present more details about how you are to register and use this clicker in another part (section #6) of this syllabus.

3. General Description of Course, Course Objectives and Learning Outcomes:

PSY 200 satisfies a GEP Social Science course requirement. You can find details regarding this requirement (category rationale, category objectives, etc.) here: (http://oucc.ncsu.edu/gep-socsci).

Psychology is the systematic study of behavior and experience. In this course, you will be exploring some of the various facets of this exciting field.

The immediate objective of the course is obvious: I want you to be able to demonstrate an understanding of some basic concepts and applications of psychology. This means I really want you to study the material and to do well on the tests that you will take in the course.

There are other important objectives beyond this one, however. I realize that you might not be a psychology major and that this might be the only psychology course you will ever take. Nonetheless, I hope that this course allows you to gain an understanding of psychology that will influence your whole life regardless of your particular area of specialization. Accordingly, I would like to see you achieve three broader and more long-term objectives this semester:

- a meaningful overview of the field of psychology so that you can have a fuller appreciation of the many issues in which psychologists are involved -- issues which directly and indirectly affect you.
- a fuller understanding of psychology so that you are better able to critically evaluate psychological sounding reports you see in newspapers, magazines, etc.
- a richer understanding of social science concepts to help you analyze real-world problems and to understand more about yourself, others, and the intricacies of human relationships.

Certainly, I'm biased, but I believe that this course could be one of the most important and useful courses you'll take at NCSU. Anyway, that is how I approach it!

Learning Outcomes. Students will be able to:
1. demonstrate a knowledge of various subfields and multiple topics within the general field of psychology so that they can discover the many issues in which psychology and psychologists are involved;
2. demonstrate a foundational knowledge of the scientific method as applied within the field of psychology so that they can critically evaluate psychological phenomena observed in both lab and field settings;
3. examine how psychological concepts that originate from various subfields of psychology (e.g., social psychology, cognitive psychology, abnormal psychology, personality theory, motivation theory) apply to themselves, others, and to the intricacies of human relationships.

4. Grading Format and Course Requirements:

EVALUATION. You will have four regular tests during the semester. Each of these tests will consist of 52 multiple-choice questions but graded as if there were only 50 questions as follows:

A+ = 49 & up	B+ = 44	C+ = 39	D+ = 34	F = 29 or less
A = 46-48	B = 41 - 43	C = 36- 38	D = 31 - 33	
A- = 45	B- = 40	C- = 35	D- = 30	

Your course grade is based upon the total of your scores from four tests plus "extra credit clicker participation points" (to be explained in section #5). While the maximum possible score is 219 points (including four tests with 52 points each and 11 clicker points), grade cut-offs will be in relation to 200 points as follows:

A+ = 196 or higher	B+ = 176 - 179	C+ = 156 – 159	D+ = 136 - 139	F = 119 or less

A = 184 -195	B = 165 - 175	C = 145 – 155	D = 125 - 135
A- = 180 -183	B- = 160 - 164	C- = 140 - 144	D- = 120 - 124

Test dates in this course are:

Test 1	**February 4**
Test 2	**March 2**
Test 3	**April 1**
Final Exam (Test 4 &Test 5)	**April 29 (Exam time, 1:00-4:00 p.m.)**

Each of the above tests will emphasize the material presented since the preceding test. You will take the first three tests during regular class periods. You will take Test 4 and Test 5 (described below) on the "final exam" day. The date for the final exam in this class has been scheduled by the university. Unless you have an exam conflict (as identified by Registration & Records), you must take the final exam on this day. **No exceptions.**

ABOUT TEST 5. : Since students frequently request an opportunity to improve their grades through some sort of additional effort, I offer the following "extra exam" procedure. On exam day, after you have completed Test 4, you will take an additional test comprised of 52 multiple-choice questions. **This test will cover material from the entire semester.** If the score on this test is better than your poorest score on one of the four regular tests, then it will replace that poor score in determining your total points for the semester. (If you do poorly on this test, then I will simply ignore it when determining your course grade.)

RESEARCH REQUIREMENT. To satisfy the research requirement, you may either participate in psychological experiments ***or*** submit a satisfactory 650-750 word paper describing a research article from a recent psychological journal. Further details are specified later in this syllabus (section #6). Performance on this requirement does not count toward your grade, *per se*. A status of IN (incomplete), however, is assigned to anyone who has not fulfilled this requirement by the end of the semester. You must complete the research requirement before the end of next semester; otherwise, Registration & Records automatically changes the IN to an F.

Note: Students who have not earned enough points for a grade higher than an “F” will receive a grade of "F" rather than a status of "IN" if the research requirement has not been fulfilled.

5. Policy Matters:

PLEASE TURN OFF ALL ELECTRONIC DEVICES (except "clickers"!). Please do not use electronic devices (laptops, tablets, phones, etc.) while class is in session. Generally, I find that having any of these devices on tempts people to use them when they ought to be giving their undivided attention to class activities. Psychologists call this “multitasking.” Here's a blog entry on the subject that will help you understand my decision to prohibit electronic devices. (Psychologists do study this stuff!)

“Stop Multitasking! It's Distracting Me (And You)”
http://www.npr.org/blogs/13.7/2013/08/19/213439794/stop-multitasking-it-s-for-other-people-s-good

CLASS ATTENDANCE. COME TO CLASS! Teaching Assistants (TAs) will take attendance at the beginning of class. If you are absent at the time the TA takes attendance, you will be considered absent for the day. A record of attendance will be maintained all semester.

A seating chart will be in effect on **Wednesday (1/14).** Students with a hearing problem, a visual problem, or any other special need can request a front-row seat or whatever is best--but the request needs to be made by**,** Monday, 1/12. **Seating assignments will be posted on the Moodle by 9:00 p.m. Tuesday (1/13).**

- "EXCUSED ABSENCES": If you miss a test day, you must provide documentation explaining why you missed the test immediately upon return to class. Excused absences are determined in accordance with university policy (see http://policies.ncsu.edu/regulation/reg-02-20-03).
- POINTS FOR "CLICKER" PARTICIPATION: When you purchase your text, you should also purchase a student response card (a.k.a., "clicker") that is compatible with TurningPoint receivers. There are two reasons I require students to have a response card. First, it increases my ability to sample what you understand from my in-class presentation, which allows me to make real-time decisions about how to proceed (e.g., whether to continue to new material or to revise what I have just presented to increase comprehension). Second, it allows me to take attendance in a way that is more psychologically sensitive than simply determining whether you are in the room.

  To receive credit for participation you must register the Device ID number found on your "clicker" by submitting information using an on-line form that you can link to from the online syllabus and the PSY 200 Moodle. Please register your "clicker" as soon as possible. Your "clicker" is unique to you. You may not "borrow" a "clicker" from another student in class as you would simply be answering for that student.

  I will start recording participation on **January 14**. I will continue to record participation through the last day of class. You will receive a half a point of credit (0.5) for each day of participation. Thus, for example, perfect participation would produce 11 participation points over the course of the semester. **To receive clicker participation points, you must be physically present (according to seating chart records) AND clicking properly (according to TurningPoint receiver records).**

  Throughout each class session, I will pose questions that will solicit your opinion (e.g., Should we retain the death penalty?) or your understanding of basic course content (e.g., Is psychology a social or physical science?). **To receive credit for participation, you must respond to each and every question posed during the class session with your best effort to answer correctly.** It is your responsibility to learn how to use your clicker. Review the instructions that come with it or that you can access online. You are also responsible for making sure that your clicker is on the proper channel before the lecture starts.

  If you forget to bring your "clicker" to class, or if it malfunctions, you may write down your answers to each of the questions posed in class on a piece of paper (also include your name, the class date). Give your responses to the teaching assistant or me as you leave the class. I will allow you to do this no more than **four times** during the semester, and I will not accept any documentation at any time other than as you exit the class. If you acquire a new "clicker"

to replace an old one, be sure to notify me of this as soon as possible BY EMAIL and be sure to include the new Device ID in the email message.

Given the nature of the activity, if you miss class, for any reason, you will not be able to earn clicker participation credit for the days that you miss. **"Clicker" participation credit cannot be made up.**

MAKE-UP TESTS. If you know in advance that you must miss a test, contact me in advance to try to make alternative arrangements. If you miss a test because of a last-minute emergency such as illness, contact me the as soon as possible, but not more than **one week** after the return to class to make alternative arrangements. If I am not in my office when you call, leave a voice message **and** send me an e-mail message.

Your excuse for missing the exam must be acceptable and adequately documented for you to be eligible to take a make-up exam. (See information regarding excused absences above.) In all likelihood, the make-up exam will be a short answer/essay exam rather than a multiple-choice exam.

6. Research Requirement:

All PSY 200 students are required to develop a familiarity with the procedures of psychological research, either by being participants in psychological experiments, or by writing a 650-750 word review of a research article found in a psychological journal. Either activity should require about the same amount of time.

PARTICIPATION IN EXPERIMENTS. You may satisfy this requirement by accumulating 6 units of experimental credit. One unit of credit is earned for every half hour (or part half hour) that you participate in an experiment being conducted in the psychology department. For example, if an experiment lasts 45 minutes you earn 2 units of credit; 65 minutes, you earn 3 units of credit, etc.

During the semester, a wide variety of experiments will be conducted. Examples include experiments on vision, social reactions to other people, and the perception of relationships between words. Signing up will be done online by accessing the following website: http://www.experimetrix.com/ncsu. Experiments may be posted at any time; so it makes sense to check the website frequently if you are looking for an experiment in which to participate. (Note: During the early weeks of a semester, there will be relatively fewer experiments than there will be later. Do not be discouraged.)

By midnight January 13, the Webmaster will register you for Experimentrix. Once you get your password you will then be able to use the "log-in" and "sign-up" links. Make sure when you sign up for an experiment that you check first for any special restrictions on who can participate, such as "only participants with 20/20 vision," or "participants must be left-handed," etc. In addition, you MUST indicate your proper section number when you sign up in order to receive credit. Our section is 003. If you put the wrong section number or no section number the credits might not be assigned to you! When you register for an experiment, a confirmation e-mail will be sent. In addition, the day before the experiment, a reminder e-mail will be sent to you.

If you have enrolled in PSY 200 after January 13, then you will need to register yourself on Experimentrix. If you need help doing this, please contact the Teaching Assistant.

All experiments on Experimentrix meet the ethical standards of the American Psychological Association and have been approved by the ethics committee of this university (a.k.a. the IRB). If, despite these precautions, you find some experiment objectionable, you may withdraw from the experiment at any time. If you withdraw for such a reason, you will still receive one credit for your participation. Please report any such incident to me immediately. E-mail to me the following information: type of experiment, name of experimenter, the problem, and your name and phone number.

RULES FOR STUDENT PARTICIPATION IN EXPERIMENTS.

- Make sure to use a valid e-mail address, and one that you check frequently, when you sign-up for experiments.
- Be sure to select your PSY 200 section when you sign-up for an experiment; otherwise your credits will not be recorded with your name. You MUST specify a course section for your credit to be recorded properly.
- Even though you will get a reminder e-mail, write down the time and place of the experiment as well as the experimenter's name and contact information in case you need to contact the experimenter.
- If you know more than 24 hours ahead of time that you will not be able to make an experiment, e-mail the experimenter and let him or her know.
- If you decide less than 24 hours ahead of time that you are unable to attend an experiment, you must call the experimenter (whose name and number you have already written down).
- It is very important to show up for the experiments for which you have signed up. If you miss an experiment without a documented excusable reason according to NCSU policy (see http://policies.ncsu.edu/regulation/reg-02-20-03), you may no longer be able to participate in Experimentrix. If you are no longer permitted to participate in Experimentrix, you will have to write a report on a research article (detailed below) to fulfill the research requirement.
- If the experimenter does not show up, or if you object to any procedure in the study, report the problem to your instructor. You will receive one credit if you showed up at the correct time and place and the experimenter did not. If you quit the study because of an objection, you will receive 1 credit for the time you participated.
- At the end of the study, you may expect an explanation of the study and its purposes.

REPORT ON A RESEARCH ARTICLE. As an alternative to participating in experiments, you may write a report describing a recent article from a psychological journal. This is not intended as "busy work." You are expected to gain and demonstrate some familiarity with the procedures of experimentation by reading about it.

- Your report should be about 650-750 words long. You cannot submit a hand-written paper.
- Include your name, student ID number, section number, e-mail address, and phone number.
- **Select an article from a RECENT *(i.e., 2015)* periodical**. **Articles from other years will not be accepted.** You must chose an article that describes a psychological **experiment**.

The article should describe how data have been collected, analyzed, and interpreted. DO NOT select an article from *Scientific American, Psychology Today,* or any other "secondary source." Such sources usually do not provide adequate detail on methods or on the analysis of results.

- DO NOT PLAGIARIZE. Be sure to describe the contents of the article using your own words. Plagiarism refers to other things, too. (See consequences of plagiarism in Section #8 -- "Academic Honesty Policy.")
- If you want to report on an article from a journal not on the list that follows, then you **must** check with me first.
- The following periodicals, all available in D.H. Hill Library, are suggested:

  - *American Journal of Psychology*
  - *Animal Behavior*
  - *Animal Learning & Behavior*
  - *Archives of Sex Research*
  - *Child Development*
  - *Developmental Psychology*
  - *Ergonomics*
  - *Human Factors*
  - *Journal of Abnormal Psychology*
  - *Journal of Applied Psychology*
  - *Journal of Clinical Psychology*
  - *Journal of Comparative and Physiological Psychology*
  - *Journal of Consulting & Clinical Psychology*
  - *Journal of Educational Psychology*
  - *Journal of Experimental Psychology*
  - *Journal of Experimental Child Psychology*
  - *Journal of Experimental Research on Personality*
  - *Journal of Experimental Social Psychology*
  - *Journal of Personality*
  - *Journal of Personality & Social Psychology*
  - *Journal of the Experimental Analysis of Behavior*
  - *Learning and Memory*
  - *Memory and Cognition*
  - *Perception & Psychophysics*
  - *Personnel Psychology*

- In your report, use HYPOTHESIS, EXPERIMENTATION, INTERPRETATION, and MORE INTERPRETATION as headings. Be sure to answer the following questions:

  (a) What question or issue is being addressed in the article? (HYPOTHESIS)
  (b) How was the study conducted? (EXPERIMENTATION)
  (c) What results were obtained? What conclusions were drawn? (INTERPRETATION)
  (d) In your judgment, was the experiment a good one? Why? How could it have been improved? (MORE INTERPRETATION)

- Give the full reference for the article, including name of author(s), title of the article, title of the journal, year, volume, and page numbers.
- All reports are graded Pass/Fail. If you **follow the instructions closely,** there should be no problems. However, if a report is determined to be unacceptable, you will receive reasons for its rejection and will be asked to make necessary revisions or to write a new review. There is a form available on the online syllabus that you can use to submit your report. It will help you include all required information.
- The review is due on the **last day of class (Wednesday, 4/22)**, but earlier submission would be greatly appreciated.

I cannot guarantee that reports turned in after April 22nd will be evaluated before the close of the semester. **In other words, if your report is late you may receive an "IN" until I can evaluate it later.**

7. NC State Policy on Working with Student with Disabilities:
Reasonable accommodations will be made for students with verifiable disabilities. In order to take advantage of available accommodations, students must register with the Disability Services Office at Suite 2221, Student Health Center, Campus Box 7509, 919-515-7653. For more information on NC State's policy on working with students with disabilities, please see the **Academic Accommodations for Students with Disabilities Regulation (REG02.20.01)**

8. Academic Honesty Policy:
I trust you. Please do not give me any reason to be suspicious of your honesty. You are to do your own work on assignments and exams. You are to use your own "clickers." If you are caught giving or receiving help on exams, misusing a "clicker," or plagiarizing, I will pursue the matter according to the guidelines describing NC State's policy on academic honesty. For more details on NC State's academic honesty policy, see: http://studentconduct.ncsu.edu/academic-integrity-an-overview

9. Schedule of Lectures and Reading Assignments:

Date		Lecture Topic	Reading Assignment
		Part 1	
January	7	Introduction to Psychology	Chapter 1
	12	Methods of Psychology	Chapter 2
	14	Nervous System	Chapter 3
	21, 26	Sensation and the Senses	Chapter 4
	28	Sensation and the Senses	
February	2	Perception	Chapter 4
	4	***TEST 1***	
		Part 2	
	9, 11	Memory	Chapter 7
	16	Learning	Chapters 6
	18, 23	Motivation & Emotion	Chapter 11/12
	25	Stress	Chapter 11/12
March	2	***TEST 2***	
		Part 3	
	4, 16	Development	Chapter 5
	18	Personality	Chapter 14
	23, 25	Tests and Measurements	PDF notes
	30	Personality Tests	Chapter 14
April	1	***TEST 3***	
		Part 4	
	6	Abnormal Psychology	Chapter 15
	8, 13	Psychological Disorders	Chapter 15
	15	Therapy	Chapter 15
	20, 22	Social Psychology	Chapter 13
April	29	*FINAL EXAM* (1:00-4:00 p.m.)	

10. Course Outline and Study Questions:

A detailed outline of the course is located on the Moodle. I have also compiled some study questions to help you review the lecture material and to prepare for class.

11. Electronically Hosted Course Components
Students may be required to disclose personally identifiable information to other students in the course, via electronic tools like email or web postings, where relevant to the course. Examples include online discussions of class topics, and posting of student coursework. All students are expected to respect the privacy of each other by not sharing or using such information outside the course.

12. Please review the NC State University PRR's which pertain to your course rights and responsibilities:

- **Equal Opportunity and Non-Discrimination Policy Statement**
  https://policies.ncsu.edu/policy/pol-04-25-05
  https://oied.ncsu.edu/equity/policies/
- **Code of Student Conduct**
  https://policies.ncsu.edu/policy/pol-11-35-01
- **Grades and Grade Point Average**
  https://policies.ncsu.edu/regulation/reg-02-50-03
- **Credit-Only Courses**
  https://policies.ncsu.edu/regulation/reg-02-20-15
- **Audits**
  https://policies.ncsu.edu/regulation/reg-02-20-04

5493-HSS

MEMORANDUM

TO: Undergraduate Courses and Curricula Committee

FROM: Dr. Karen Bullock, Department Head, Social Work

SUBJECT: (A) Natural Sciences Requirement, (B) Advanced Social Sciences Requirement, (C) ANT 252 requirement and (D) Psychology 200 requirement.

DATE: June 5, 2015

Proposal

A. Adjust the **natural sciences elective** requirement in the social work curriculum (16SOCWKB) so that the required three credit hours are satisfied by any course on the approved GEP natural sciences list.

B. Adjust the **SOC/ANT advanced elective** requirement in the social work curriculum (16SOCWKB) so that the required three credit hours are satisfied by any course on the approved GEP social sciences list.

C. Adjust the **ANT 252** requirement in the social work curriculum (16SOCWKB) so that the required 3 hours are satisfied by any anthropology course on the approved GEP social science course list.

D. Adjust the **PSY 200** requirement in the social work curriculum (16SOCWKB) so that the required three credit hours are satisfied by PSY 200 or PSY 2**.

Proposal Letter	Current	Course Number	Hours	Proposed	Course Number	Hours
A	Introduction to Human Nutrition,	FS 301	3	Any approved GEP Natural Science Course	_____	3
	Genetics in Human Affairs	GN 301	3			
	& Introduction to Human Nutrition	NTR 301	3			
B	SOC/ANT Advanced Elective	_____	3	Any approved GEP Social Science Course	_____	3
C	Cultural Anthropology	ANT 252	3	Any ANT course approved for GEP Social Science	ANT ___	3
D	Introduction to Psychology	PSY 200	3	PSY 200 or PSY ***	PSY ___	3

Justification

The Social Work Department would like to broaden the requirements for the Natural Science elective, Advanced Social Science elective and Anthropology course in an attempt to provide all incoming students the same opportunity to enroll in their desired classes. As incoming transfer students are allowed to have exceptions made to have courses taken at other institutions satisfy degree requirements at NC State, incoming freshmen should be permitted the same opportunity with the freedom to choose from a broader spectrum of courses. This will also allow students to complete all courses prior to their field placement (SW 490 – 12 credit hours) in a timely manner as students are not permitted to take a course with their field placement. Limiting these course options creates a barrier to successful and timely matriculation and increases the level of competition for seats in classes like ANT 252 and 200-level SOC courses. The broadening of the natural science elective allows for students not to be limited to the subjects of nutrition and genetics. The broadening of the social sciences elective allows for students to have more flexibility when choosing courses.

SIGNATURE PAGE

CURRICULA ACTION FOR 16SOCWKB

RECOMMENDED BY:

_____ 3/24/2016

HEAD, DEPARTMENT/PROGRAM DATE

ENDORSED BY:

_____ **3/25/2016**

CHAIR, COLLEGE COURSES & CURRICULA COMMITTEE DATE

_____ 3/28/16

COLLEGE DEAN DATE

APPROVED BY:

_____

CHAIR, UNIVERSITY COURSES & CURRICULA COMMITTEE DATE

_____

CHAIR, COUNCIL ON UNDERGRADUATE EDUCATION DATE

_____

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

APPROVED EFFECTIVE DATE _____

Social Work (B) (16SOCWKB)

Semester Display Effective Date: 7.2009

FRESHMAN YEAR

Fall Semester	Credit	Spring Semester	Credit
ENG 101 Comp & Rhetoric [H]	4	SW 201 Community Soc Serv [1,14]	4
FL_ 201 For Lang Intermed [12,K]	3	ANT 252 Cultural Anthropology [D,J]	3
Mathematics [4,A]	3	History [6,C]	3
SOC 2xx [5,D]	3	PSY 200 Intro to Psychology	3
HES_*** Health & Exercise Studies Course [E]	1	Nat Sci/Human Science + Lab [7,B]	4
	14		17

SOPHOMORE YEAR

Fall Semester	Credit	Spring Semester	Credit
SW 290 Soc Welfare Dev. In US [14]	3	SW 307 SW Policy [14]	3
NTR 301 or GN 301 [7,B]	3	History [6,C]	3
Literature [8,C]	3	Literature [8,C]	3
Arts and Letters [9]	3	GEP Additional Breadth Req. [F]	3
Philosophy [10]	3	GEP Interdisc Perspective Req. [G]	3
GEP Interdisc Perspective Req. [G]	2-3	HES_*** Health & Exercise Studies Course [E]	1
	17-18		16

JUNIOR YEAR

Fall Semester	Credit	Spring Semester	Credit
SW 310 Human Behavior [14]	3	SW 320 Social Work Practice I [2,14]	4
SW 312 Multicultural Social Work [14]	3	SW 300 SW Research Methods [14]	3
ANT or SOC 3xx/4xx Elective [11]	3	Social Work Elective [3,14]	3
ST 311 Statistics [4,A]	3	Free Elective [13,I]	3
Free Elective [13]	3	Free Elective [13]	3
	15		16

SENIOR YEAR

Fall Semester	Credit	Spring Semester	Credit

SW 405 Social Work Practice II [2,14]	4	SW 490 Field Work [2,14]	12
SW 408 Social Work Practice III [2,14]	3		
SW 480 Preparation for Field [14]	1		
Free Elective [13]	3		12
Free Elective [13]	3		
	14		

Minimum Credit Hours Required for Graduation*[1]: 121[1]

Major/college requirements and footnotes:

1. SW 201 is offered both Fall and Spring Semesters.
2. Practice and Field courses must be taken in successive semesters. Field Work is offered in both Fall and Spring semesters but must be taken during the last semester. SW 480 Preparation for Field Work is a co-requisite of SW 405 Social Work Practice II. SW 405 and SW 408 are taken in the same semester.
3. One course from (SW 412, SW 413, SW 414, SW 415, SW 416, SW 417, SW 420, SW 495, or SW 498).
4. One MA course from GEP list (see website below) and ST 311 meet the Mathematical Sciences GEP requirement.
5. One 200-level SOC course.
6. One course from History I and one course from History II. History I (AFS 275 or 276, HI 207, 215, 216, 232, 233, 263, 264, 270, 275, or 276) and History II (HI 205, 208, 209, 210, 221, 222, 233, 251, 252).
7. BIO 105/106, 181/183, or BIO 212 fulfills the lab science; FS 301 or NTR 301 complete the 7 credit hour GEP Natural Sciences requirement.
8. One course from Literature I and one course from Literature II. Literature I (ENG 219, 220, 221, 222, 251, 261, or 262, FL 219, 220, 221, or 222, FLF 301, FLS 301 or 303, FLG 300 or 316, FLR 303) and Literature II (ENG 219, 220, 221, 222, 223, 224, 246, 248, 249, 251, 252, 261, 262, 265, 266, 305, 349, 351, 362, 363, 369, 370, 371, 372, 373, 376, 377, 380, 382, 383, 385, 390, 394, 398, 399, 406, 407, 420, 439, 448, 449, 451, 452, 453, 462, 463, 464, 465, 468, 469, 470, 471, 486, or 487, FL 219, 220, 221, 222, 223, 224, 394, 406, or 407, FLF 301, 302, 316, 323, 324, 352, 414, 415, or 492, FLN 301, 302, 401, FLS 300, 301, 302, 303, 304, 323, 341, 342, 343, 351, 352, 353, 403, 404, or 492, FLG 300, 316, or 323, FLR 303 or 304, GRK 320, HON 202).
9. One course from Arts and Letters (All HA courses, MUS 180 and all 3 credit hour MUS 200-400 courses, all 200 and above REL courses, ADN 111, 112, 202, 212, 219, 231, 272, 273, 281, 311, 384, 386, 414, or 454, AFS 340 or 375, ARC 140, 141, or 142, ARS 251, 252, 259, 306, 351, or 353, COM 103, 203, 213, 233, 243, 303, 321, 323, 333, 340, 364, 374, or 411, DAN 272 or 295, ENG 282, 283, 321, 364, 374, 411, or 492, FL 216, FLF 318, FLG 318, FLS 318, GD 200 or 342, GRK 310, IDS 496, LAR 444, LAT 310).
10. Philosophy; any 3-credit PHI course from the approved GEP list.
11. One course from (ANT 310, 325, 330, 346, 348, 373, 374, 395, 431, 495; SOC 300, 301, 304, 305, 306, 309, 310, 311, 342, 351, 381, 395, 400, or 401).
12. Foreign language proficiency—Proficiency at the FL_ 201 level is required for graduation.
13. Only 12 hours of free electives can be taken for credit only (S/U grading). For more information regarding credit only courses see http://www.ncsu.edu/policies/academic_affairs/courses_undergrad/REG02.20.15.php
14. SW courses require a C- or better.

***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.

A. Mathematical Sciences (6 credit hours)
See footnote 4 above (one MA course from GEP list and ST 311 meet this requirement)
B. Natural Sciences (7 credit hours – include one laboratory course or course with a lab)
See footnote 7 above (BIO 105/106, 181/183, or ZO 212); GN 301 or FS 301 complete the 7 credit hour requirement
C. Humanities (6 credit hours selected from two different disciplines/course prefixes)
See footnotes 6, 8 and 10 above. Humanities requirement exceeds GEP requirement.
D. Social Sciences (6 credit hours selected from two different disciplines/course prefixes)
See footnotes 5 and 11 above. Social Sciences requirement exceeds GEP requirement and includes SOC 2__, ANT 252.
E. Health & Exercise Studies (2 credit hours – at least one 100-level Fitness and Wellness Course)
Choose from the University approved GEP Health & Exercise Studies course list.
F. Additional Breadth - (3 credit hours to be selected from the following checked University approved GEP course lists)
_ X __ Mathematical Sciences/Natural Sciences/Engineering course lists

G. Interdisciplinary Perspectives (5-6 credit hours) *Choose from University approved GEP Interdisciplinary Perspectives course list.*
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:
I. U.S. Diversity
Choose a course from the University approved GEP US Diversity course list.
J. Global Knowledge
The following course(s) if completed as part of the Major requirements may fulfill this requirement: ANT 252
K. Foreign Language proficiency - Proficiency at the **FL_102** level.

FORMAT A
(SEMESTER-BY-SEMESTER CURRICULUM DISPLAY)

Indicate display status: Current: Proposed: **X X** Proposed Effective Semester: **Spring 2016**

Degree/Plan Title: **Social Work -B** Concentration/Subplan Title: **NOSUBPLAN**

Plan SIS Code: **16SOCWKB** Subplan SIS Code:

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

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

FRESHMAN YEAR			
FALL SEMESTER	CREDITS	SPRING SEMESTER	CREDITS
ENG 101 Comp & Rhetoric [H]	4	SW 201 Community Soc Serv [1,14]	4
FL_ 201 For Lang Intermediate [12,K]	3	Any ANT course on approved GEP-Social	3
Mathematics [4,A]	3	Science list [5, D]	
SOC 2xx [5]	3	History I [6, C]	3
HSS 120 [G]	2	PSY 200 Intro to Psychology [5]	3
		Nat Sci/Human Science + Lab [7,B]	4
	Total: 15		*Total:* 17
SOPHOMORE YEAR			
FALL SEMESTER	CREDITS	SPRING SEMESTER	CREDITS
SW 290 Soc Welfare Dev. In US [14]	3	SW 307 SW Policy [14]	3
GEP Natural Science [7,B]	3	History II [6]	3
Literature [8]	3	Literature [8]	3
Arts and Letters [9]	3	GEP Additional Breadth Req. [F]	3
Philosophy [10, C]	3	GEP Interdisc Perspective Req. [G]	3
		HES_*** Health & Exercise Studies Course [E]	1
	Total: 15		*Total:* 16
JUNIOR YEAR			
FALL SEMESTER	CREDITS	SPRING SEMESTER	CREDITS
SW 310 Human Behavior [14]	3	SW 320 Social Work Practice I [2,14]	4
SW 312 Multicultural Social Work [14]	3	SW 300 SW Research Methods [14]	3
GEP Social Science [5,11, D]	3	Social Work Elective [3,14]	3
ST 311 Statistics [4,A]	3	Free Elective [13]	3
Free Elective [13]	3	Free Elective [13]	3
	Total: 15		*Total:* 16
SENIOR YEAR			
FALL SEMESTER	CREDITS	SPRING SEMESTER	CREDITS
SW 405 Social Work Practice II [2,14]	4	SW 490 Field Seminar [2,14]	3
SW 408 Social Work Practice III [2,14]	3	SW 491 Community Based Field	9
SW 480 Preparation for Field [14]	1	Internship [2,14]	
HES_*** Health & Exercise Studies Course [E]	1		
Free Elective [13]	3		
Free Elective [13]	3		
	Total: 15		*Total:* 12
Minimum Credit Hours Required for Graduation*: 121			

Major/Program Footnotes:

1. SW 201 is offered both Fall and Spring Semesters.

2. Practice and Field courses must be taken in successive semesters. Field Work is offered in both Fall and Spring semesters but must be taken during the last semester. SW 480 Preparation for Field Work is a co-requisite of SW 405 Social Work Practice II. SW 405 and SW 408 are taken in the same semester.

3. One course from (SW 412, SW 413, SW 414, SW 415, SW 416, SW 417, SW 420, SW 495, or SW 498).
4. One MA course from GEP mathematics list (see website below) and ST 311 meet the Mathematical Sciences GEP requirement.
5. Twelve credit hours in social science are required. At least three disciplines must be represented.
6. One 3-credit course required from the college-approved History I course list (a 200-level survey course covering a culture significantly different from our own, i.e., pre-industrial or non-Western), and one 3-credit course required from the college-approved History II course list (a 200-level survey course covering our own or a similar culture)..
7. BIO 105/106, 181/183, or BIO 212 fulfills the lab science; Any course on approved GEP-Natural Sciences list completes the seven credit hour GEP Natural Sciences requirement.
8. One 3-credit course required from the college-approved Literature I list (a survey course covering literature outside the U.S. and prior to the 20th century), and one course required from the college-approved Literature II list (any course that meets the Literature I requirement, or a course in American or Twentieth Century Literature, or an upper division survey course or literature course in a period, genre, or major figure in English, a foreign language in English translation, or the original foreign language).
9. One 3-credit course is required from the college-approved Arts & Letters course list.
10. Philosophy; any 3-credit PHI course from the approved GEP list.
11. Choose from college approved GEP-Social Science course list.
12. Foreign language proficiency—Proficiency at the FL_ 201 level is required for graduation.
13. Only 12 hours of free electives can be taken for credit only (S/U grading). For more information regarding credit only courses seehttp://www.ncsu.edu/policies/academic_affairs/courses_undergrad/REG02.20.15.php
14. SW courses require a C- or better.

General Education Program (GEP) requirements and GEP Footnotes:

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

A. **Mathematical Sciences** (3 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: **ST 311**

B. **Natural Sciences** (3 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: **BIO 105/106, BIO 181, BIO 103 or ZO 212**

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

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

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.

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

G. **Interdisciplinary Perspectives** (5-6 credit hours)
Choose from the University approved GEP Interdisciplinary Perspectives course

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:

I. **U.S. Diversity** (USD)
Choose from the University approved GEP U.S. Diversity course list or choose a course identified on the approved GEP course lists as meeting the U.S. Diversity (USD) co-requisite.

J. **Global Knowledge** (GK)
Choose from the University approved GEP Global Knowledge course list or choose a course identified on the approved GEP course lists as meeting the Global Knowledge (GK) co-requisite.

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

CURRICULUM REQUIREMENTS

Format B

Degree/Plan Title: **Social Work -B**	Plan SIS Code: **16SOCWKB**
Concentration/Subplan Title: **NOSUBPLAN**	Subplan SIS Code:
Indicate requirements status: Current:	Proposed: **XX** Proposed Effective Semester: **Spring 2016**
New Degree Audit required? (Y or N) **Y**	
Critical Path Courses - Identify using the code (CP) which courses are considered critical path courses which represent specific major requirements that are predictive of student success in a given program/plan. Place the (CP) next to the credit hours for the course.	

MAJOR FIELD OF STUDY REQUIREMENTS:		
Required Courses/Groups/ Electives:	***Credit Hours***	***GEP category, if applicable***
Indicate if course or course groupings have a C-wall or MGPA requirement and which are considered Critical Path courses – indicate with (CP) next to applic. course.		**List GEP category and hours satisfied by a Major requirement**
Math ST 311	3	Mathematical Sciences (3 hours)
Natural Science with Lab BIO 105/106, 181, 183, or 212	4	Natural Science (4 hours)
Social Sciences PSY 200 or PSY ***	3	
200-level SOC	3	
Any GEP-Social Science approved ANT course	3	Social Sciences (3 hours)
Any GEP approved Social Science	3	Social Sciences (3 hours)
Social Work (all courses have C- wall) SW 201 SW 290, 300, 307, 310, 312, 320, 405, 480, 490 SW 480 (S Allowed)	 4 38 1	
Concentration Courses/Groups/Electives: **SW Elective: One of the following: (all courses have C- wall)** SW 412, 413, 415, 416, 417, 420, 440, 495, 498, 517	3	
Free Electives:	15	
Total credit hours under Major Field of Study: ***Minimum 27 hours required in program area.***	80	
COLLEGE REQUIREMENTS:		
Orientation Course(s): N/A	N/A	N/A
Other: GRP 501 History I – See course list	3	Humanities (3 hours)
GRP 502 History II – See course list	3	

GRP 503 Literature I – See course list	3	
GRP 504 Literature II – See course list	3	
GRP 509 Foreign Language 200 level – See course list	3	
GRP 511 Philosophy – Any GEP approved 3 credit PHI course for which the student meets the pre-requisite	3	Humanities (3 hours)
GRP 523 Arts and Letters – See course list	3	
Total credit hours under College Requirements:	21	

NCSU GENERAL EDUCATION PROGRAM REQUIREMENTS

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

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

At least one of the following must be listed:

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

General Education Program Requirements: *Minimum 39-40 hrs*	*Credit hours*	*How will the GEP requirement be met? (Choose applicable statement from 1-6 listed above)*
Mathematical Sciences *(6 credits)* **(At least 1 course with *MA or ST* prefix)** *Course(s) in the Major may double-count to satisfy this requirement and also satisfy either the Global Knowledge or U.S. Diversity co-requisites.*	3	*(Choose statement 1, 2 or 3)* Major/College course requirement satisfies 3 credit hrs of this requirement. Remaining hours required must be chosen from the University Approved GEP course list for the category.
Natural Sciences *(7 credits)* **(At least 1 *lab* course or course with a *lab*)** *Course(s) in the Major may double-count to satisfy this requirement and also satisfy either the Global Knowledge or U.S. Diversity co-requisites.*	3	*(Choose statement 1, 2 or 3)* Major/College course requirement satisfies 4 credit hrs of this requirement. Remaining hours required must be chosen from the University Approved GEP course list for the category.
English 101 **(C- or better required)** *(4 credits)*	4	ENG 101
Humanities *(6 credits)* **(Courses from *two different* disciplines)** *Course(s) in the Major may double-count to satisfy this requirement and also satisfy either the Global Knowledge or U.S. Diversity co-requisites.*	X	*(Choose statement 1, 2 or 3)* Minimum requirements are satisfied by Major/College course requirements.
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.*	X	*(Choose statement 1, 2 or 3)* Minimum requirements are satisfied by Major/College course requirements.
Additional Breadth *(3 credits)* **(Choose approach that is *different* from the approach of the Major)** *Major/College requirements cannot satisfy this requirement and an AB course cannot be double-counted except in satisfying the Global Knowledge or U.S. Diversity co-requisites.*	3	*(Choose statement 5 or 6)* Choose course(s) from the University Approved GEP course list for this category.
Interdisciplinary Perspectives *(5 credits)* *Course(s) in the Major may double-count to satisfy this requirement and also satisfy either the Global Knowledge or U.S. Diversity co-requisites.*	5	*(Choose statement 1, 2 or 3)* *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	*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.	**20**	

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)* Co-requisite is satisfied by a Major/College course requirement
Global Knowledge co-requisite (GK)	n/a	*(Choose statement 1 or 4)* Co-requisite is satisfied by a Major/College course requirement
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)	X	Satisfied by College/Program Requirements
Technology Fluency	X	Satisfied by College/Program Requirements

Total credit hours required to complete Degree: **Total must be within 120-128 credit hours.**	**121**	**As applicable, indicate here the overall GPA requirement for degree completion including course completion. *2.0 overall GPA***

Current Title and Course Catalog Description

ACC 420: Strategic Management Accounting
Units: 3

Strategic management accounting focuses on the development and use of managerial accounting information in planning, control, and decision making activities and in designing and implementing business strategies. Integration of performance measurement and cost control with corporate strategy.

Prerequisite: ACC 200 with C- or better and [BUS/ST 350, or ST 302 or ST 361 or ST 370 or ST 372]

Offered in Fall Spring Summer

View department website

Find this course:

2015 Fall Term 2016 Spring Term

Proposed Title and Course Catalog Description

ACC 420: Cost Accounting for Effective Management
Units: 3

Cost Accounting for Effective Management focuses on the development and use of managerial accounting information in planning, control, and decision making activities and in designing and implementing business strategies. Integration of performance measurement and cost control with corporate strategy.

Prerequisite: ACC 200 with C- or better and [BUS/ST 350, or ST 302 or ST 361 or ST 370 or ST 372]

Offered in Fall Spring Summer

View department website

Find this course:

2015 Fall Term 2016 Spring Term

Rationale for Change:

The faculty in the department believe that the new name better reflects the catalog description and course content.

Syllabus:

ACC 420
Strategic Management Accounting
Section 001, 8:30 – 9:45 T/Th, 3210 Nelson Hall
Spring 2016

Professor: Paul F. Williams
Office: 3158 Nelson Hall
Telephone:
Office: 919 - 515 - 4436
Home: 919 - 362 - 1009 (not to be used after 10:00 P.M.)
E-mail: paul_williams@ncsu.edu
Office Hours: 1:00 - 3:00 Tuesday through Thursday or by appointment
Course web site: http://moodle.wolfware.ncsu.edu

PREREQUISITE:

ACC 200 with C- or better and [BUS/ST 350, or ST 302 or ST 361 or ST 370 or ST 372]

TEXTS:

Required:

Managerial Accounting: Making Decisions and Motivating Performance. Datar and Rajan, 2014, Pearson. Cost $303.64

Optional:

Gleim and Flesher. *CMA Review Parts 1 and 2*, any recent edition, Gleim Publications, Inc. Cost $20.43

COURSE LEARNING OUTCOMES:

1. Demonstrate the ability to interpret and record the transactions that comprise the flow of product costs through an organization.
2. Demonstrate problem solving and critical thinking skills required to find solutions to business (or organizational) problems.
3. Demonstrate the ability to develop and interpret accounting information relevant for use in the planning, control and decision making activities of a business.
4. Demonstrate understanding of performance measurement and cost control techniques and how they are used in business organizations.

COURSE OVERVIEW/CATALOG DESCRIPTION

Cost Accounting for Effective Management focuses on the development and use of managerial accounting information in planning, control, and decision making activities and in designing and implementing business strategies. Integration of performance measurement and cost control with corporate strategy.

GRADING:

Exam 1	250
Exam 2	250
Homework	100
Quizzes	100
Final exam	300
Total	1000

GRADING SCALE:

970-1000 A+	860-879 B+	760-779 C+	660-679 D+	580 or less F
900-969 A	800-859 B	700-759 C	600-659 D	
880-899 A-	780-799 B-	680-699 C-	580-599 D-	

HOMEWORK:

Several questions, exercises, problems, and cases from each chapter of the textbook are assigned. Those appearing on the list of assignments in Times New Roman font should be prepared before coming to class – we will be using these exercises and problems to illustrate key points in the chapter. The items on the assignment sheet that appear in *Monotype Corsiva* will be collected and graded to determine your homework grade. These assignments will be collected during the class period following completion of the chapter.

QUIZZES:

During the term at the start of selected classes you will be provided a short quiz on recently completed material. The purpose of the quizzes is to provide us signals about which topics need more attention.

CLASS ATTENDANCE AND MAKE UP POLICY:

While there is not an official attendance policy, students are generally expected to attend class. Students will only be given an opportunity to make up a missed assignment, quiz or exam in the event of an excused absence. In the case of a missed exam, the final will substitute for the missed exam score. Please see the University policy on excused absences https://policies.ncsu.edu/regulation/reg-02-20-03

THE REQUIREMENT OF STUDENTS ELECTING TO ENROLL FOR CREDIT ONLY S/U

In order to receive a grade of S, students are required to take all exams and quizzes, complete all assignments, and earn a grade of C- or better. Conversion from letter grading to credit only (S/U) grading is subject to university deadlines. Refer to the Registration and Records calendar for deadlines related to grading. For more details refer to http://www.ncsu.edu/policies/academic_affairs/courses_undergrad/REG02.20.15.php.

THE REQUIREMENT OF STUDENTS ELECTING TO ENROLL FOR AUDIT AU

Students auditing this course are required to take all exams and quizzes, and complete all assignments. For more details refer to http://www.ncsu.edu/policies/academic_affairs/pols_regs/REG205.00.5.php

POLICY ON INCOMPLETE GRADES

At the discretion of the instructor, students may be given an incomplete grade for work not completed because of a serious interruption in their work not caused by their own negligence (i.e., documented illness or family emergency occurring after a student has completed the majority of the course). An incomplete grade cannot be given, however, as a substitute for an F when the student's performance in the course is deserving of failing. An incomplete is only appropriate when the student's record in the course is such that the successful completion of particular assignments, projects, or tests missed as a result of a documented serious event would enable that student to pass the course. The University policy on incomplete grades is located at:
http://www.ncsu.edu/policies/academic_affairs/grades_undergrad/REG02.50.3.php

POLICY ON ACADEMIC INTEGRITY

The NC State University Honor Pledge: I have neither given nor received unauthorized aid on this test or assignment.
It is the understanding and expectation of the instructor that the student's signature on any test or assignment means that the student has upheld the University's Honor Pledge.

It is the responsibility of each student to understand the University's policy on academic integrity as defined in the Code of Student Conduct Policy located at:
http://www.ncsu.edu/policies/student_services/student_discipline/POL11.35.1.php

STATEMENT FOR STUDENTS WITH DISABILITIES

Reasonable accommodations will be made for students with verifiable disabilities. In order to take advantage of available accommodations, students must register with Disability Services for Students at 1900 Student Health Center, Campus Box 7509, 515-

7653. For more information on NC State's policy on working with students with disabilities, please see:
http://www.ncsu.edu/policies/academic_affairs/courses_undergrad/REG02.20.1.php

ANTI-DISCRIMINATION STATEMENT

"NC State University provides equality of opportunity in education and employment for all students and employees. Accordingly, NC State affirms its commitment to maintain a work environment for all employees and an academic environment for all students that is free from all forms of discrimination. Discrimination based on race, color, religion, creed, sex, national origin, age, disability, veteran status, or sexual orientation is a violation of state and federal law and/or NC State University policy and will not be tolerated. Harassment of any person (either in the form of quid pro quo or creation of a hostile environment) based on race, color, religion, creed, sex, national origin, age, disability, veteran status, or sexual orientation also is a violation of state and federal law and/or NC State University policy and will not be tolerated. Retaliation against any person who complains about discrimination is also prohibited. NC State's policies and regulations covering discrimination, harassment, and retaliation may be accessed at http://www.ncsu.edu/policies/campus_environ or http://www.ncsu.edu/equal_op. Any person who feels that he or she has been the subject of prohibited discrimination, harassment, or retaliation should contact the Office for Equal Opportunity (OEO) at 515-3148."

STATEMENT ABOUT ELECTRONICALLY HOSTED COURSE COMPONENTS

Students may be required to disclose personally identifiable information to other students in the course, via electronic tools like email or web-postings, where relevant to the course. Examples include online discussions of class topics, and posting of student coursework. All students are expected to respect the privacy of each other by not sharing or using such information outside the course."

DAILY SCHEDULE OF ASSIGNMENTS:

You should answer ***all*** of the Review Questions at the end of each chapter prior to coming to class in addition to the other exercises (E), problems (P) or cases (C) listed below.

Date	**Chapter**	**Written Assignments**
01/07	Introduction to the course	
01/12	1	E- 11, 17

01/14	2	E-11,22, P-36 Ch. 1: *E-18, P-21*
01/19	2	
01/21	3	E-13,17, P-34 Ch. 2: *E-12; P-34*
01/26	3	
01/28	3	
02/02	4	E-12,18, P-33 Ch. 3: *E-21, P-28*
02/04	4	
02/09	5	E-14-17,23, P-36 Ch. 4: *E-20,22, P-31*
02/11	5	
02/16	6	E-14, P-34; Ch. 5: *E-21,22, P-35*
02/18	6	
02/23	Exam 1	
02/25	7	E-12,17 Ch. 6: *E-21,P-35*
03/01	8	E-13,23 Ch. 7: *P-22*
03/03	8	
03/15	9	E12,13,18, P-35 Ch. 8: *E-14, P-30*
03/17	9	
03/22	9	
03/24	10	E-12, P-24,27 Ch. 9: *P-23,29*
03/29	12	E-18,19, P-23 Ch. 10: *E-11,16*
03/31	12	
04/05	Exam 2	

04/07	13	E15,20,21, P32 Ch. 12: *P-24,26,32*
04/12	13	
04/14	13	
04/19	15	E-13,14,17 Ch. 13: *E-26,30*
04/21	15	Ch. 15: *E-18, P-24*
05/03	Final exam 8:00 – 11:00 A.M.	