

## University Courses & Curricula Committee 2015-2016

March 30th, 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 16th, 2016 Minutes
- Course and Curricular Business

### New Business

- Review of the Consent Agenda

Action	Type	Notes
University College Drop Courses	Drop	University College Courses not taught in 5 years
HESD Course Name Change Memo	Minor Revision	Drop "DAN" prefix due to low student enrollment

College of Agricultural & Life Sciences			
Presenter	Reviewers	Action	Type
Tarpy	Black, Rieder, Fath	<a href="#">AEC 441 <i>Biology of Fishes</i></a>	Revise Course
	Hessling, Black, Beller	<a href="#">ANS 260: <i>Basic Swine Science</i></a>	New Course
	Auerbach, Lindsay, Plummer	<a href="#">ANS 271 <i>Swine Nutrition</i></a>	New Course
	Nowel, Currie, Peretti	<a href="#">FM 272 <i>Swine Feed Mill Management</i></a>	New Course
Trivedi	Hergeth, Fath, Ferguson	11NTSBS <i>Nutrition Science</i>	Curricular Revision
	Black, Black, Wu	11NTSBS—11NTSAN <i>Applied Nutrition</i>	Curricular Revision
College of Engineering			
Presenter	Reviewers	Action	Type
Ferguson	Nowel, Hergeth, Beller	<a href="#">ECE 466 <i>Compiler Optimization and Scheduling</i></a>	Revise Course
	Tarpy, Lindsay, Plummer	<a href="#">MES 300 <i>Systems Engineering</i></a>	Revise Course
Peretti	Auerbach, Fath, Wu	<a href="#">MES 402 <i>MES Capstone Design II</i></a>	Revise Course
	Trivedi, Currie, Swanson	<a href="#">MES 405 <i>Mechanical Engineering Systems Lab II</i></a>	Revise Course
College of Natural Resources			
Presenter	Reviewers	Action	Type
Lindsay	Driscoll, Hessling, Rieder	<a href="#">CNR 250 <i>Diversity and Environmental Justice</i></a>	New Course
	Trivedi, Plummer, Peretti	<a href="#">FOR 430 <i>Forest Health &amp; Protection</i></a>	New Course
College of Sciences			
Presenter	Reviewers	Action	Type
Black	Trivedi, Currie, Peretti	<a href="#">BSC 478 <i>Research Fundamentals in Biological Sciences</i></a>	New Course
	Driscoll, Ferguson, Swanson	<a href="#">BSC 492 <i>Professional Experience</i></a>	Revise Course
	Hergeth, Currie, Auerbach	<a href="#">BSC 493 <i>Research Experience</i></a>	Revise Course
Black	Auerbach, Fath, Wu	<a href="#">BSC 494 <i>Teaching Experience</i></a>	New Course
	Tarpy, Peretti, Beller	<a href="#">CH 431 <i>Physical Chemistry I</i></a>	Revise Course
	Trivedi, Fath, Plummer	<a href="#">CH 433 <i>Physical Chemistry II</i></a>	Revise Course
	Lindsay, Ferguson, Swanson	<a href="#">CH 437 <i>Physical Chemistry for Engineers</i></a>	Revise Course

University College			
Presenter	Reviewers	Action	Type
	Black, Currie, Wu	<a href="#">MUS 120 Introduction to Music Theory</a>	Revise Course
Beller	Trivedi, Auerbach, Driscoll	<a href="#">MUS 210 History of Rock I: 1950s-1970s</a>	New Course
	Lindsay, Currie, Black	<a href="#">MUS 211 History of Rock II: 1980s-Present</a>	New Course
	Nowel, Hergeth, Plummer	<a href="#">MUS 240 Introduction to the Music Industry</a>	New Course
	Tarpy, Lindsay, Peretti	<a href="#">MUS 270 Songwriting using Digital Audio Workstations</a>	New Course
Fath	Ferguson, Plummer, Nowel	<a href="#">MUS 305 Music Composition</a>	Revise Course
	Black, Ferguson, Swanson	<a href="#">MUS 310 Music of the 17<sup>th</sup> and 18<sup>th</sup> Centuries</a>	Revise Course
Beller	Rieder, Lindsay, Wu	GSP Prefix Memo***	New Prefix
Humanities & Social Sciences			
Presenter	Reviewers	Action	Type
Driscoll	Nowel, Hessling, Trivedi	<a href="#">PHI 309 Political Philosophy</a>	Revise Course
	Black, Tarpy, Rieder	<a href="#">REL 408 Islam in the Modern World</a>	Revise Course

**Notes:**

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

**University Courses and Curricula Committee – March 16th, 2016**

Talley Student Union 4140

Call to Order: 12:36 PM

**Members Present:** Chair, Scott Despain, Andy Nowel, Catherine Driscoll, Peter Hessling, Shweta Trivedi, Kathleen Rieder, Helmut Hergeth, Betty Black, Elizabeth Fath, Edwin Lindsay, Debbie Currie, Steven Peretti, Scott Ferguson, Amanda Beller, Jamie Plummer, Mian Wu.

**Ex-Officio Members Present:**, Li Marcus, Sarah Howard, Lindsey Mihalov, John Harrington, Brittany Mastrangelo, Barbara Kirby.

**Guests:** Debbie Acker (Shelton Leadership), David Parish (COE)

**Proxies:** Melissa Williford (for Rebecca Swanson)

**Welcome and Introductions**

- **Remarks from Chair Dr. Scott Despain:**

The Chair welcomes guests, Debby Acker and David Parish, as well as the new UCCC member from the College of Engineering, Steven Peretti. The Chair is glad that members were able to work out the last meeting.

- **Remarks from Dr. Barbara Kirby:**

Thanks to members who attended the last curriculum meeting during the threatening weather. Li and Scott did a great job of using technology in order to achieve quorum and hold the meeting.. There are only three meetings left in the semester, so college committees will be kicking into high gear. Courses are moving long pretty well in CIM. Please let us know if you have questions.

Issues and questions continue to surface with course consultations. Kirby will send a memo to associate deans as a reminder of the process. Informally, faculty collaborations and discussions about courses should take place. The formal consult, facilitated by the college's associate dean, is needed if there is duplication in the content of the course with another course that is being taught. Also a consult is needed if a college wants to drop a course and it's a required course in a degree program. (another course or other solution for the student to earn the degree credit). Consultations do NOT include reviews of instructors or instructor credentials. The Dept./College is responsible for credential their teaching faculty. UCCC does not review the General Education component of the course. General Education comments are discussed at CUE. UCCC is primarily interested in course content duplication with another course, or if dropping a course will be an issue for degree completion. Dr. Kirby encouraged members to talk with other faculty members and to continue to do the good work of building partnerships and meaningful collaboration.

- **Approval of UCCC February 24th, 2016 Minutes**

- Approved Unanimously
- Trivedi adds that it was extremely convenient to join via Google Hangouts and would suggest that members speak into the mic for those that log-in so that they can hear their fellow committee members clearly in any future uses of Google Hangouts.

**New Business:**

**O Consent Agenda—Approved Unanimously**

- **Discussion:** Consent agenda was presented and approved without further discussion.

**O Course and Curricular Business**

- **IIBEBS—11BEBEC *Ecological Engineering* -- Approved Unanimously**

**Discussion:** Trivedi presents all three actions for Tarpy. There are already an Environmental Engineering at NC State, but this would be the first in offering. This concentration is mostly about ecosystems (mostly about water). The course work is going to be a lot of math and physics concerning sustainable ecosystems and how to implement design. She believes it is moving ahead in the right direction. Peretti wants to know how much of an overlap there is, because no consult came through Engineering. Guest David Parish says that this has been through both colleges already. Wu wants to know if there are any policy aspect included in this curriculum and how it impacts quiz material. Trivedi did not see a policy course.

- **11BEBS—11BEBEA *Agricultural Engineering* – Approved Unanimously**

**Discussion:** Cross-listing consults with BIO (Jane Lubischer) are all included and have passed the approval process at the college level. Fath mentions that in the “current format” 8 semester display, BEA 401 has two titles in the two versions and wants to know if it is a typo. It is in the Spring of Junior year. Trivedi says this was listed under the Junior year changes. Li looks it up, and finds that it is still “Instrumentation of Biological Systems” in the catalog. Chair wants them to match on the display.

- **11BEBS—BS *Biological Engineering* – Approved Unanimously**

**Discussion:** These changes give more flexibility to the sophomores. Whatever courses are not being taught are being taken out. Junior year has several replacements and a BIO elective removed and added to the Spring semester instead. A consult was done with Jane Lubischer. The Chair mentions that the same BAE typo is in this action. Li will check. Dr. Kirby suggests that this curriculum is working to phase out older courses and make students take the newer courses. Hessling says that "Biology Elective in the Junior Spring should be attached to footnote 6. Hessling also wondered why PB 321 was discussed in the consultation. Trivedi thinks they were trying to confirm which courses were cross-listed.

- **11BEBS—11BEBEP *Biological Processing*– Approved Pending**

**Discussion:** There was a consult with Dr. Jim Brown for these revisions. Driscoll says the only thing that stood out was the chemistry change without consultation to the Chemistry department. Kirby thinks they should check with Chemistry to verify. It was an elective and now it is required. The curriculum was approved pending consult with Chemistry.

- **BAE 305 *Biological Engineering Circuits* – Approved Unanimously**

**Discussion:** The Chair gives a general note that faculty members are invited to include the parenthetical on our schedule "Subject to change with notice." Kirby agrees, and notes that this has happened in the past, to the detriment of the students. There are situations that come up (weather, etc.), which merit “subject to change,” but on the whole, faculty should strive to maintain the course that they propose to teach at the beginning of the semester.

- **ANS 453/553 *Physiology and Genetics of Growth and Development* – Approved Unanimously**

**Discussion:** Beller notes that the syllabus has a section entitled "Special Needs", and would suggest a different word choice to be consistent with University wording, such as "Students with Disabilities." Williford says that Moodle is mentioned but the course component does not mention it. Kirby agrees that is required. The Chair wishes to convey this to CALS.

### **E 102 *Engineering in the 21<sup>st</sup> Century* – Approved Unanimously**

**Discussion:** It is a GEP course, which Rieder admires. David Parish says this is big course, and that his college is going to teach roughly 1,600 students every spring. Parish has taught this twice now, and has it down to a science.

- **NR 460 *Renewable Natural Resources Management & Policy*— Approved Unanimously**

**Discussion:** Lindsay presents the course. Currie thinks it looked good. Nowel likes the great description in grade determination, but feels that the grading scale might be an issue, since showing the grade conversation is necessary. (For example, what is an A+? B+? C-?) The Chair is interested in making sure the 400 level maintained, and the 500-level does not have a negative impact on it. Any other changes to the course should make clear what the Undergraduate and Graduate requirements are. Kirby asks if there is a transportation cost for the course, but Lindsay assures here that there is not. CNR has consistently provided transport for students.

- **Leadership: *Cross Disciplinary Perspectives (New Minor)* – Approved Unanimously**

**Discussion:** Debbie Acker thanks everyone involved, and says that she enjoyed getting to know everyone across the University. She sees this minor as a value added to our students. Students from 8-10 colleges each semester gain respect for seeing things from other perspectives. Fath asks if the Shelton Program considered a capstone course, since it is cross-disciplinary. Acker says that they have, and will incorporate that later on.

- **REL 407 *Islamic History to 1798* – Approved Pending**

**Discussion:** Driscoll proposes two changes which fix a cross-listing that never occurred and making it dual level. The undergraduate one has General Education requirements and objectives with "quizzes" but no such measures are listed when you look at the grading methods.. It also requires inequalities for grades. Members mention that the title at the top of the syllabus might not be ADA accessible. Kirby asks if there is something on the OUCG site about font, or if there is something we need to add to our site for clarification for our instructors. Beller says that the DSO might have those regulations. The Chair states that Arial is the font choice for our University. Beller adds that underlining is also difficult to read.

- **REL 423 *Religion and Politics in America* – Approved Pending**

**Discussion:** Course was presented and approved without further discussion.

- **ADN 371 *Sculptural Geometry: Creating Patterns for Fibers* – Approved Pending**

**Discussion:** Hergeth has a question about total completions, which say that students may take this course twice for credit. What do the students get out of taking it twice? Rieder says that it is only 3 credits, for people that want to develop their technique and craft, because there are people who start to progress but need more practice by the time the course is wrapping up. It incorporates 3D models. Members discover that this is not only for Design students, but allows 25% of its courses to be filled by students from other colleges. Members suggest clarifying the number of completions, in relation to non-Design students. Kirby believes this would make it sturdier for accreditation, and says it can be completed in a single sentence.

- **ADN 373 *Survey of Fashion Industry and Design* – Approved Unanimously?**

**Discussion:** The Chair mentions that the committee is past time, and invites the members to stay to complete this final action. Members agree. Rieder moves to approve this course. Hergeth does not have the same concern with this course because it is only for Design students. Beller suggests adding inequalities for the grading scale. Course was approved without further discussion.

## **Course Syllabus: AEC 441 – Biology of Fishes**

**Offered:** Fall 2016. Tuesday and Thursday 3:00 PM - 4:15 PM.

**Credit Hours/Units:** Three (3) credits. Two 1.25-hour lectures per week.

**Classroom:** David Clark Labs Room 102.

**Prerequisites:** C- or better in BIO/PB 360. Concurrent enrollment in AEC 442.

**Instructor:** Dr. Benjamin J. Reading  
Office: David Clark Labs Room 336  
Phone: 515-3830  
Email: [bjreadin@ncsu.edu](mailto:bjreadin@ncsu.edu)  
Office Hours: By appointment

**Course Description:** Fishes are the largest and most diverse assemblage of vertebrates on the earth with nearly 30,000 described species. This undergraduate level course provides an overview of ichthyology including evolution, classification, and identification of fishes and a comparative examination of divergent fish behavior, physiology, and ecology. The content of the course will emphasize evolutionary relationships between fish groups and their adaptations for life in streams, lakes, and oceans. The course will be organized into three major segments: 1) taxonomy and systematics of fishes, 2) physiology and biology of fishes, and 3) ecology of fishes.

**Course Topics:** Behavior, evolution, physiology and ecology of fishes, emphasizing their adaptations for life in streams, lakes, and oceans.

### **Learning Outcomes:**

Students should have the knowledge to do the following:

- Identify select species of fishes (in particular those endemic to the east coast of the United States)
- Explain how fishes have adapted to the variety of aquatic habitats that they occupy
- Use examples to illustrate how fish perceive and respond to environmental factors
- Explain how physiological processes may differ between fish groups
- Analyze how ecophysiological principles apply to fish management and aquaculture

**Textbook:** Assigned readings are to be completed prior to the corresponding lectures. Prior to each lecture, there will be a short discussion on the reading topics and you should come prepared. Participation in these discussions will influence your final grade (see below).

### **Required:**

**The Diversity of Fishes: Biology, Evolution, and Ecology, 2<sup>nd</sup> ed. (2009)** by Gene Helfman, Bruce B. Collette, Douglas E. Facey, and Brian W. Bowen. Publisher: Wiley-Blackwell; ISBN-10: 1405124946; ISBN-13: 978-1405124942

Cost: \$75-120

### **Recommended:**

**Encyclopedia of Fish Physiology: From Genome to Environment (2011)** edited by Anthony P. Ferrell. North Carolina State University has a subscription to this encyclopedia and it can be accessed through the Libraries website (<https://www.lib.ncsu.edu/>). ISBN: 0123745454. Web Link:

<http://catalog.lib.ncsu.edu/record/NCSU2664659>

Cost: eBook available through the NCSU library system

**Grading Policies:**

There are three midterm examinations and one cumulative final exam. The best two out of three midterm examinations will be counted at 100 points each (the lowest score will be dropped). There will be a scientific research report worth 100 points and cumulative final exam worth 100 points. Students also will be rated on classroom participation during discussions (100 points) for a total of 500 possible points. Final grading will be based on a percentage basis.

Component	Weight
Exam I	100 points, 20% of final grade
Exam II	100 points, 20% of final grade
Scientific Research Report	100 points, 20% of final grade
Classroom Discussion Participation	100 points, 20% of final grade
Cumulative Final Exam	100 points, 20% of 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

**Exams:** Exams will consist of various forms of assessment including, but not limited to, multiple choice, definition, matching, short essay, and diagram labeling.

**Classroom Discussion Participation:** Students are expected to participate in discussion of lecture materials. Throughout the course, there also will be periodic critical thinking reading assignments from the peer-reviewed literature that will be the subject of short discussion during the class period (approximately 20 minutes each). These will be assigned one week in advance of the discussion and students should come prepared to ask and answer questions related to the material. Grading will be based on the following rubric (see also [Attendance Policy](#) below--If you are absent from lecture you will not be able to participate):

Points 76-100: Student is engaging and initiates at least one thoughtful contribution during each lecture or critical reading assignment. These comments are timely, insightful, relevant to the discussion, and contribute substantially to the dialogue. Student is attentive when others present ideas and provides constructive comments.

Points 51-75: Student initiates at least one thoughtful contribution during half of the lectures or critical reading assignments. These comments are sometimes insightful, relevant to the discussion, and contribute to the dialogue. Student is sometimes inattentive when others present ideas and infrequently provides constructive comments.

Points 26-50: Student rarely initiates thoughtful contributions (less than one quarter of the lectures or critical reading assignments). These comments are seldom insightful or relevant to the discussion and do not contribute to the dialogue. Student is usually inattentive when others present ideas and rarely provides constructive comments.

Points 0-25: Student never initiates thoughtful contributions during the lectures or critical reading assignments. These comments are not insightful or relevant to the discussion and do not contribute to the dialogue. Student does not listen to others and may interrupt others while they are speaking. Student does not pay attention and/or is disruptive.

**Scientific Research Report:** Students will be expected to choose an instructor-approved fish-related topic for in-depth study and report. Using reputable peer-reviewed sources, students will give a detailed analysis of the nature of the topic. The paper will be 5-10 pages long, Times New Roman font, type-12 size, double-spaced, and include a reference section (at least 5 peer-reviewed references). Note, if you use Wikipedia as a reference, you will receive no more than a C on this paper.

**Extra Credit:** There will be no extra credit in this course.

### **Course Policies:**

Personal technology: Laptop computers, tablets, or other electronic devices may be used for taking notes or accessing course materials during lectures (this is encouraged). Please do not use personal cell phones or other electronic devices for any purpose unrelated to the class during lectures. All electronic devices should be powered down and stored in a backpack or pocket during any of the examinations. If your cell phone rings during a lecture or examination, you must bring doughnuts for the class at the next meeting.

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: Absences from class and examinations must be excused in advance with the exception of a documented illness or emergency. Unexcused late presentations or short discussions will carry a penalty of 20 points per week. Extra credit work will not be accepted.

Attendance Policy: Students are expected to attend each lecture as the short preceding discussion is graded as classroom participation and these points cannot be made up (e.g., 100 points / 28 lectures = ~3.5 points per lecture). For complete attendance and excused absence policies, please see <http://policies.ncsu.edu/regulation/reg-02-20-03>.

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>.

Academic Honesty: See <http://policies.ncsu.edu/policy/pol-11-35-01> 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."

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/](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.

**Online Class Evaluations:** Please complete the online course evaluation during the last 2 weeks of the semester. 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 not know how any one student responded to any of the questions, and students will not know the ratings for any instructors.

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

Student help desk: [classeval@ncsu.edu](mailto:classeval@ncsu.edu)

More information about ClassEval: <http://www.ncsu.edu/UPA/classeval/>

### Course Schedule:

<b>Calendar</b>	<b>Date</b>	<b>Lecture Topic</b>
1) <b>First Day of Classes</b>	<b>Thursday 8/18/16</b>	<b>Introduction and Aquatic vs. Terrestrial Life</b> <u>Readings:</u> "Aquatic versus Terrestrial Life" and <b>Chapters 1 and 2</b> (pp. 3-6 and 9-17).
2)	<b>Tuesday 8/23/16</b>	<b>Diversity of Fishes and Systematics I:</b> Ancient Fishes, Myxini (hagfishes), and Petromyzontiformes (lampreys) <u>Readings:</u> <b>Chapter 11</b> (pp. 169-177) and <b>Chapter 13</b> (pp. 231-241).
3)	<b>Thursday 8/25/16</b>	<b>Diversity of Fishes and Systematics II:</b> Chondrichthys (sharks, rays, and skates) <u>Readings:</u> <b>Chapter 11</b> (pp. 177-200) and <b>Chapter 12</b> (pp. 205-227)
4)	<b>Tuesday 8/30/16</b>	<b>Diversity of Fishes and Systematics III:</b> Chondrichthys (sharks, rays, and skates) <u>Readings:</u> <b>Chapter 11</b> (pp. 200-204) and <b>Chapter 12</b> (pp. 227-230)
5)	<b>Thursday 9/1/16</b>	<b>Diversity of Fishes and Systematics IV: Primitive Bony Fishes</b> Sacropterygians (lobe-finned fishes), Chondrostei (paddlefish, sturgeons, and reedfishes), Holostei (bowfin and gars), Elopiformes (tarpons and ladyfish) and Anguilliformes (eels) <u>Readings:</u> <b>Chapter 13</b> (pp. 242-249) and <b>Chapter 14</b> (pp. 261-266)

- 6) **Tuesday 9/6/16** **Diversity of Fishes and Systematics V: Teleost Fishes**  
 Clupeiformes (herrings and anchovies), Cypriniformes (carps and minnows), and Siluriformes (catfishes, madtoms, and bullheads)  
Readings: Chapter 14 (pp. 267-274)
- 7) **Thursday 9/8/16** **Diversity of Fishes and Systematics VI: Teleost Fishes**  
 Esociformes (pikes), Osmeriformes (smelts), Salmoniformes (whitefishes, graylings, salmon, and trouts), Gadiformes (cods), and Lophiiformes (goosefishes and angler fishes)  
Readings: Chapter 14 (pp. 274-290)
- 8) **Tuesday 9/13/16** **Diversity of Fishes and Systematics VII: Teleost Fishes**  
 Mugiliformes (mulletts), Atheriniformes (silversides), Beloniformes (needlefishes and halfbeaks), Cyprinodontiformes (rivulines, goodeids, and topminnows)  
Readings: Chapter 15 (pp. 291-300)
- EXAM I Thursday 9/15/16**
- 9) **Tuesday 9/20/16** **Diversity of Fishes and Systematics VIII: Teleost Fishes**  
 Series Percomorpha  
Readings: Chapter 15 (pp. 300-326)
- 10) **Thursday 9/22/16** **Diversity of Fishes and Systematics IX: Teleost Fishes**  
 Series Percomorpha  
Readings: Chapter 15 (pp. 300-326)
- 11) **Tuesday 9/27/16** **Diversity of Fishes and Systematics X: Teleost Fishes**  
 Series Percomorpha  
Readings: Chapter 15 (pp. 300-326)
- 12) **Thursday 9/29/16** **Oxygen, Metabolism, and Energetics**  
Readings: Chapter 5 (pp. 57-73)
- 13) **Tuesday 10/4/16** **Sensory Systems**  
Readings: Chapter 6 (pp. 75-90)
- Fall Break Thursday 10/6/16** **No Class**
- 14) **Tuesday 10/11/16** **Homeostasis**  
Readings: Chapter 7 (pp. 91-109)
- 15) **Thursday 10/13/16** **Functional Morphology of Locomotion and Feeding**  
Readings: Chapter 8 (pp. 111-128)
- 16) **Tuesday 10/18/16** **Early Life History**  
Readings: Chapter 9 (pp. 129-145)
- 17) **Thursday 10/20/16** **Juveniles, Adults, Age, and Growth**  
Readings: Chapter 10 (pp. 149-165)

**EXAM II                      Tuesday 10/25/16**

- 18)                      **Thursday 10/27/16      Fish Genetics**  
Readings: **Chapter 17** (pp. 355-364 and pp. 379-389)
- 19)                      **Tuesday 11/1/16          Ecology of Fishes: Habitats and Adaptations**  
Readings: **Chapter 18** (pp. 393-421)
- 20)                      **Thursday 11/3/16          History of Ichthyology and Imperiled Fishes**  
Readings: **Chapter 1** (pp. 6-7) and **Chapter 26** (pp. 585-622).
- 21)                      **Tuesday 11/8/16          Geographic Distributions of Fishes and Non-Native Introductions**  
Readings: **Chapter 16** (pp. 329-354)
- 22)                      **Thursday 11/10/16        Fishes of North Carolina**  
Readings: None. Handouts provided
- 23)                      **Tuesday 11/15/16        Aquaculture (Fish Farming)**  
Readings: None. Handouts provided
- 24)                      **Thursday 11/17/16        Stock Enhancement and Fisheries Management**  
Readings: **Chapter 24** (pp. 525-536)

**EXAM III                      Tuesday 11/22/16**

- Thanksgiving Break      Thursday 11/24/16      No Class**
- 25)                      **Tuesday 11/29/16        Make-up Lecture**  
Readings: None.
- 26)                      **Thursday 12/1/16        Review**  
Readings: None.
- Exam Week                  Tuesday 12/6/16        No Class**
- Exam Week                  Thursday 12/8/16        No Class**

**CUMULATIVE FINAL EXAM**

## **MEMORANDUM**

**Date:** February 10, 2016

**To:** HES Faculty

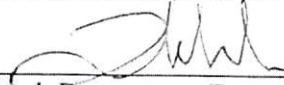
**From:** Curriculum Committee

**Subject:** Proposed drop/deactivate of HES courses from course catalog

**Proposed Revision:** The Department of Health & Exercise Studies is requesting to drop:  
HESA 224 Water Safety Instructor  
HESA 228 Springboard Diving  
HESS 244 Fencing  
PEHL 295 Special Topics  
HESM 314 Methods of Group Exercise Instruction

**Justification:** The request to drop the aforementioned courses is a result of the courses not being offered in the last 5 years. There is no plan to offer the courses in the near future by the Department.

**RECOMMENDED BY:**

  
\_\_\_\_\_  
Head, Department/Program

2/22/16  
\_\_\_\_\_  
Date

**ENDORSED BY:**

  
\_\_\_\_\_  
Chair, College Courses & Curricula Committee

3/14/16  
\_\_\_\_\_  
Date

  
\_\_\_\_\_  
College Dean

3/16/16  
\_\_\_\_\_  
Date

\_\_\_\_\_  
Chair, University Courses & Curricula Committee

\_\_\_\_\_  
Date

\_\_\_\_\_  
Chair, Council on Undergraduate Education

\_\_\_\_\_  
Date

**APPROVED:**

\_\_\_\_\_  
Provost's Office

\_\_\_\_\_  
Date

**MEMORANDUM**

**Date:** February 10, 2016  
**To:** HES faculty  
**From:** Curriculum Committee  
**Subject:** Proposed Course name change and cross-listing prefix change


**Proposed Revision:** Name change for the following courses:  
HESD 264 Ballet to HESD 264 Ballet I  
HESD 273 Jazz Dance to HESD 273 Jazz Dance I

**Justification:** The request to change HESD 264 Ballet to HESD 264 Ballet I and HESD 273 Jazz Dance to HESD 273 Jazz Dance I is to address the additions of HESD 265 Ballet II and HESD 280 Jazz Dance II respectively for the Dance minor.

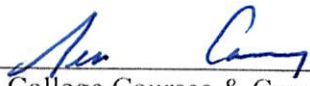
**Proposed Revision:** A cross-listing prefix drop for the following courses:  
DAN/HESD 264 Ballet I to HESD Ballet I  
DAN/HESD 274 Modern Dance I to HESD Modern Dance I  
DAN/HESD 275 Modern Dance II to HESD Modern Dance II

**Justification:** The request to drop the DAN prefix is due to no student enrollment for the past five years in these courses with the DAN prefix.

**RECOMMENDED BY:**

  
\_\_\_\_\_  
Head, Department/Program 2/22/16  
Date

**ENDORSED BY:**

  
\_\_\_\_\_  
Chair, College Courses & Curricula Committee 3/14/16  
Date

  
\_\_\_\_\_  
College Dean 3/16/16  
Date

\_\_\_\_\_  
Chair, University Courses & Curricula Committee Date

\_\_\_\_\_  
Chair, Council on Undergraduate Education Date

**APPROVED:**

\_\_\_\_\_  
Provost's Office Date

# ANS 260 – Basic Swine Science

## Course Syllabus

### Section 801

### SPRING 2017

### 2 Credit Hours

#### Course Description:

Basic disciplines and concepts involved in swine production including: industry structure, trends and statistics; production phases and buildings; genetic improvement; reproduction; nutrition; health and biosecurity; nutrient management; marketing, meat quality, and career opportunities in the swine industry.

#### Learning Outcomes:

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

- Describe the basic pork production systems and the management skills required for efficient and sustainable operation.
- Identify the scientific principles involved in pork production from farm to consumer.
- Explain the structure of the U.S. swine and pork industry and list the trends in production, marketing, and integration.
- Identify available career opportunities within the pork industry.

#### Course Structure:

The course will be delivered on-line through Iowa State University's learning management system which is Blackboard. The link to the log-in page is: <https://bb.its.iastate.edu/>.

Even though this course does not formally meet, students are still required to 'meet'. This means participating in on-line discussions (forums) and responding to main discussion posts. It is highly encouraged that students log into the course at a minimum of every other day.

#### There will be several discussion post areas as follows:

- **Introduce Yourself to the Class:** Use this area to introduce yourself to your fellow students so everyone can get to know others in the class. This area can also be used for personal notes to the entire class during throughout the duration of the course.
- **Course Questions:** If you have any questions about assignments, content presented, etc., please place them in this area. More than likely other students will have the same questions.
- **Anonymous Feedback:** This area will allow you to provide anonymous feedback on the course. If you have concerns and don't feel comfortable addressing me directly, your feedback can be placed in this area.
- **Pigs/Pork in the News:** Sometimes we all come across interesting information and articles about the pork industry. Please use this area to post any news that you think



would be beneficial for the entire class. This board is an excellent opportunity to share and discuss information about current events.

Each week the instructor will have modules available starting at 8 a.m. on Monday morning. To keep up-to-date on the material, students must complete modules within one week from the time they were posted.

**Instructors:**

Kenneth Esbenshade (kesbensch) - Instructor

Email: [kesbensch@ncsu.edu](mailto:kesbensch@ncsu.edu)

Web Page: <https://ans.cals.ncsu.edu/team/dr-kenneth-l-esbenshade/>

Phone: 9195159702

Fax: 9195758753

Office Location: Riddick 466B and on-line at [kesbensch@ncsu.edu](mailto:kesbensch@ncsu.edu)

Office Hours: On-line 15:00 to 17:00 MW and by appointment

Tom J. Baas (kesbensch) - Instructor

Email: [tjbaas@iastate.edu](mailto:tjbaas@iastate.edu)

Web Page: <http://www.ans.iastate.edu/people/tom-baas>

Phone: 5152946728

Office Location: On-line at [tjbaas@iastate.edu](mailto:tjbaas@iastate.edu)

Office Hours: On-line 15:00 to 17:00 MW and by appointment

**Course Meetings:**

None

**Course Materials:**

Textbooks

None

Expenses

None

Materials

None

**Requisites and Restrictions:**

Prerequisites

None

Co-requisites

None

Restrictions

Restricted to non-ANS (Animal Science) students. ANS students cannot take the course for credit.

**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
Exams	100 each	Three, 100 point exams; Specific information related to the each exams (e.g., length, whether proctored, etc.) will be provided at the beginning of each semester in the syllabus.
Online Discussion (Forum Posts)	100	<p>This course does not meet face to face and discussion boards (forums) will be an important part of learning the material. The discussion board (forum) is a way for students to communicate with others in the class, seek additional help with the course, and to express view points. Students should not hesitate to post comments about the subject matter being covered or ask for more explanations of current subjects or previous posts. The discussion board (forum) is a means of learning. Students should refrain from using the forum to send abusive or harassing messages. It is understood that all forum posts express the view and opinions of the author and are not necessarily those of the course instructor or institutions involved in the Swine Science Online program.</p> <p>Grading of the discussion board (forum) will be based on number of posts and quality of material posted. Students are expected to contribute at least one post each week. Failure to meet the minimum of one post per week will result in a score of 50 points (out of the 100 total). If the minimum number of posts are met, that quality of the posts will separate the number of points received. If the</p>

		posts are relevant to the topic, clear, concise (5-8 sentences), grammatically correct and demonstrate depth of independent and creative thinking, than a grade of 90-100 will be given. Grades of 80-89, 70-79, and 60-69 will be given as the quality of the posts decrease from that expected and defined above.
Quizzes	50	Five short quizzes or activities will be given randomly throughout the course to ensure that students remain actively engaged with the subject matter.

### Letter Grades

This Course uses the Following (Non-Standard) Letter Grading Scale:

- 437 ≤ A+ ≤ 450
- 419 ≤ A ≤ 436
- 405 ≤ A- ≤ 418
- 392 ≤ B+ ≤ 404
- 374 ≤ B ≤ 391
- 360 ≤ B- ≤ 373
- 347 ≤ C+ ≤ 359
- 329 ≤ C ≤ 346
- 315 ≤ C- ≤ 328
- 302 ≤ D+ ≤ 314
- 284 ≤ D ≤ 301
- 270 ≤ D- ≤ 283
- 0 ≤ F ≤ 269

### 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:**

Assignments, including online discussion posts, quizzes, and examinations must be completed on-line within the assigned time period. Additional time will not be granted unless prior approval has been granted.

**Attendance Policy:**

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

This course is a distance education format and does not meet face-to-face. Regular participation is expected in regard to discussion boards, electronic mail correspondence, and completion of assignments. It is the student's responsibility to notify the instructor if he/she is unable to complete an assignment because of circumstances beyond his/her control.

For complete attendance policies, please see <http://policies.ncsu.edu/regulation/reg-02-3>

**Absences Policy:**

None

**Makeup Work Policy:**

None

**Additional Excuses Policy:**

None

**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>

**Academic Honesty:**

See <http://policies.ncsu.edu/policy/pol-11-35-01> 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.

**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/](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.

The Swine Industry — 08/21/2017 - 08/25/2017

Module 1 - Introduction to the Swine Industry

Module 2 - Industry Trends and Statistics

Module 3 - Industry Structure and Statistics

Pork organizations and swine farm management — 08/28/2017 - 09/01/2017

Module 4 - Pork Organizations - Pork Checkoff

Module 5 - Production Phases - Three-Site Production

Module 6 - Pig Flow and Scheduling

Swine genetics and breeding programs — 09/04/2017 - 09/08/2017

Module 7 - U.S. Seedstock Industry

Module 8 - Industry Breeding Programs/Crossbreeding

Module 9 - Genetic Improvement Programs

Reproductive Management — 09/11/2017 - 09/15/2017

Module 10 - Reproductive Management

Module 11 - Reproductive Management

Module 12 - Artificial Insemination

Exam 1 — 09/18/2017 - 09/22/2017

Exam covers material in Modules 1-12

Swine management in the farrowing house — 09/25/2017 - 09/29/2017

Module 13 - Farrowing Management  
Module 14 - Baby Pig Management  
Module 15 - Lactation Management

Growth/Finish management — 10/02/2017 - 10/06/2017

Module 16 - SEW and Nursery Management  
Module 17 - Finishing Management  
Module 18 - Nutrition and Feeding Strategies

Nutrition, nutrient management, and buildings — 10/09/2017 - 10/13/2017

Module 19 - Nutrition and Feed Strategies  
Module 20 - Manure Management  
Module 21 - Buildings and Ventilation

Carcass and meat quality — 10/16/2017 - 10/20/2017

Module 22 - Carcass Evaluation  
Module 23 - Meat Quality - Genetics and Evaluation  
Module 24 - Meat Quality - Genetics and Evaluation

Exam 2 — 10/23/2017 - 10/27/2017

Exam covers material in Modules 13-24

Female swine management — 10/30/2017 - 11/03/2017

Module 25 - Gilt Selection  
Module 26 - Sow Longevity  
Module 27 - U.S. Packing Industry

Marketing and Health — 11/06/2017 - 11/10/2017

Module 28 - Marketing Options  
Module 29 - Health and Diseases  
Module 30 - Health and Diseases

Animal welfare and PQA — 11/13/2017 - 11/17/2017

Module 31 - Health and Diseases  
Module 32 - Welfare/PQA Plus  
Module 33 - Welfare/PQA Plus

Recordkeeping — 11/20/2017 - 12/01/2017

Module 34 - Niche Markets/Alternative Production  
Module 35 - Production Records/Benchmarking  
Module 36 - Financial Projections/Budget Worksheet

Exam 3 — 12/04/2017 - 12/08/2017

Exam 3 covers material in Modules 25-36

# **ANS 271 – Swine Nutrition**

## **Course Syllabus**

### **Section 801**

**FALL 2016**

**1 Credit Hour**

#### **Course Description:**

Principles involved with developing and implementing a swine feeding program, including fundamentals of feeding pigs, understanding nutrients used in pig diets, factors affecting nutrient recommendations, feed systems for pigs, feed ingredients, and formulation of swine diets.

#### **Learning Outcomes:**

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

- Design a feeding program for all classes of pigs
- Evaluate feed ingredients from an economic and performance standpoint
- Troubleshoot basic nutritional problems commonly observed on a commercial swine farm.

#### **Course Structure:**

This is an internet class so the main teaching method will be the use of powerpoint presentations. Chatroom discussions, opinion pieces, and other writing assignments will be used in the course and they are critical components of the learning experience.

There are no textbooks required. However, the National Swine Nutrition Guide is an excellent supplement to the class and can be ordered from Ms. Chelsey Branderhorst at [cbranderhorst@usporkcenter.org](mailto:cbranderhorst@usporkcenter.org). The instructors will routinely post current events that pertain to the swine industry and swine nutrition, and students will be responsible for knowing the material for class discussions and exams.

Since this is an internet class, class attendance will not be taken. However, there will be approximately 16 modules in class and each of the modules must be completed prior to the last day of class which will be at the conclusion of the first week in December. Students are expected to frequently check the website for discussions, etc. If a student is unable to complete assignments, modules or exams in a timely fashion, they will need to contact the instructors via email with the reason for the incompleteness and how they propose the situation will be resolved. The instructors will then work with the student on an individual basis to create a plan so the student can successfully complete all the requirements of the class. Assignment due dates will be provided at the same time the assignments are given.

**Instructors:**

Kenneth Esbenshade (kesbensh) - *Instructor*

Email: [kesbensh@ncsu.edu](mailto:kesbensh@ncsu.edu)

Web Page: <https://ans.cals.ncsu.edu/team/dr-kenneth-l-esbenshade/>

Phone: 9195159702

Fax: 9195758753

Office Location: Riddick 466B and online at [kesbensh@ncsu.edu](mailto:kesbensh@ncsu.edu)

Office Hours: Online 15:00 to 17:00 MW and by appointment

Robert Thaler (kesbensh) - *Instructor*

Email: [Robert.Thaler@sdstate.edu](mailto:Robert.Thaler@sdstate.edu)

Web Page: <https://www.sdstate.edu/resources/directory/directory-detail.cfm?view=detail&ci=1937>

Phone: 6056885435

Office Location: Online at [Robert.Thaler@sdstate.edu](mailto:Robert.Thaler@sdstate.edu)

Office Hours: Online at 15:00 to 17:00 MW and by appointment

**Course Meetings:**

None

**Course Materials:**

Textbooks

None

Expenses

None

Materials

None

**Requisites and Restrictions:**

Prerequisites

ANS 150 (Intro to Animal Science), ANS 260 (Basic Swine Science) or  
Equivalent

Co-requisites

None

Restrictions

Restricted to non-ANS (Animal Science) students. ANS student cannot take the  
course for credit.

**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
Exams	6 at 70 points each for a total of 420 points	6 Exams; 70 points each; Total possible points of 420; Given at the conclusion of Modules 3,5,7,10,13 and 16; Specific instructions related to the exams (e.g., length, whether proctored, etc.) will be provided at the beginning of each semester in the syllabus.
Online Discussion	75 points	<p>This course does not meet face to face and therefore contributing to online discussions are important ways to communicate thoughts and ideas and to exchange with fellow students. Students should not hesitate to post questions or comments about the subject matter being covered.</p> <p>In addition, new topics for discussion will be posted on the discussion board weekly. Students must add at least one post to the discussion board during that week. The post must be at least one paragraph in length and in complete sentences. The posting must cover the topic and present a thought or idea about the subject.</p> <p>Posts will be graded based on the number of posts and the quality of the post. Failure to make at least one post per week will result in a loss of 5 points for each week that a post is not provided.</p> <p>Content will be graded based on how developed the thoughts, ideas, and concepts are that are presented in the post. Well developed, concise posting will result in an A for the assignment, lesser work will receive B or C. Poor postings will receive a grade of D or F. Grades (points) will be equally distributed throughout the course and will be equal to 5 points per module.</p>

## Letter Grades

This Course uses Standard NCSU Letter Grading:

480 ≤ **A+** ≤ 495

460 ≤ **A** ≤ 479

446 ≤ **A-** ≤ 459

431 ≤ **B+** ≤ 445

411 ≤ **B** ≤ 430

396 ≤ **B-** ≤ 410

381 ≤ **C+** ≤ 395

361 ≤ **C** ≤ 380

347 ≤ **C-** ≤ 360

332 ≤ **D+** ≤ 346

312 ≤ **D** ≤ 331

297 ≤ **D-** ≤ 311

0 ≤ **F** ≤ 296

### **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:**

Assignments, including online discussion posts and examinations must be completed on-line within the assigned time period. Additional time will not be granted unless prior approval has been granted by the instructors.

**Attendance Policy:**

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

This course is a distance education format and does not meet face-to-face. Regular participation is expected in regard to discussion boards, electronic mail correspondence, and completion of assignments. It is the student's responsibility to notify the instructor if he/she is unable to complete an assignment because of circumstances beyond his/her control.

**Absences Policy:**

None

**Makeup Work Policy:**

None

**Additional Excuses Policy:**

None

**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>

**Academic Honesty:**

See <http://policies.ncsu.edu/policy/pol-11-35-01> 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.

**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/](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.

Introduction — 08/17/2016 - 08/19/2016

- Class basics
- Define nutrient classes
- Factors affecting nutrient recommendations

Vitamins & Minerals — 08/22/2016 - 08/26/2016

- Options
- Limitations
- Cost/unit of available nutrient
- Premixes, base mixes, supplements and how they are used

Water — 08/29/2016 - 09/02/2016

- Quality
- Quantity
- Interactions
- Methods to supply water

Exam 1 — 09/05/2016 - 09/09/2016

Energy Sources — 09/05/2016 - 09/09/2016

- Options
- Limitations
- Cost/unit of available nutrient

Proteins & Amino Acids — 09/12/2016 - 09/16/2016

- Options
- Limitations
- Cost/unit of available nutrient

Exam 2 — 09/19/2016 - 09/23/2016

Nutrient Digestion & Absorption in the Pig — 09/26/2016 - 09/02/2016

Start at the mouth and end in the anus

Show how and where each nutrient is digested and absorbed

Factors affecting digestion and absorption

Nutrient Digestion & Absorption in the Pig - Continued — 10/03/2016 - 10/07/2016

Start at the mouth and end in the anus

Show how and where each nutrient is digested and absorbed

Factors affecting digestion and absorption

Exam 3 — 10/10/2016 - 10/14/2016

Nursery Pig Nutrition — 10/10/2016 - 10/14/2016

Phase feeding, budget

Ingredient selection

Finishing Pig Nutrition — 10/17/2016 - 10/21/2016

Establishing genotype of pig

Phase feeding

Split-sex feeding

Feed budgets

Lean growth curves

Benchmarking/close-outs - overview

Sow Nutrition — 10/24/2016 - 10/28/2016

Gestation

Lactation

Other Breeding Herd — 10/31/2016 - 11/04/2016

Developing gilts

Boars

Cull sows

Exam 4 — 11/07/2016 - 11/11/2016

Feed Additives — 11/07/2016 - 11/11/2016

Improvement needed to pay for itself

Antimicrobials

Beta agonists

Enzymes

Flavors

Mycotoxin binders & mold inhibitors

Ingredient Selection — 11/14/2016 - 11/18/2016

- Nutritional considerations
- Non-nutritional considerations
- Quality Control
- Alternate ingredients
- By-products

Feed Processing — 11/21/2016 - 11/25/2016

- Particle size reduction
- Pelleting
- Weighing
- Mixing
- Liquids
- Quality control

Exam 5 — 11/28/2016 - 12/02/2016

Other — 11/28/2016 - 12/02/2016

- Nutritional disorders
- Feeding systems for swine
- Feeder design
- Nutritional factors affecting:
  - Nutrient excretion
  - Air quality
  - Pork Quality

Professional Nutritists Comments — 12/05/2016 - 12/07/2016

- Producer
- Feed company

Exam 6 — 12/07/2016 - 12/09/2016

# FM 272 – Swine Feed Mill Management

## Course Syllabus

### Section 801

FALL 2016

1 Credit Hour

#### Course Description:

Principles of feed manufacturing, equipment operation, feed and ingredient quality assurance and regulatory compliance in a modern feed milling operation. Overview of feed mill regulations and safety.

#### Learning Outcomes:

Students completing the course will be able to:

- Explain the operation of a commercial or integrated feed mill
- Demonstrate knowledge about the processes involved in purchasing/receiving ingredients, manufacturing feed, and implementing a quality assurance program.
- Recognize and name the feed manufacturing equipment in a feed mill and explain the function of each piece of equipment.
- Describe the regulations impacting feed mills and feed mill operations
- Prepare and conduct a safety meeting.

#### Course Structure:

This course will be delivered online (via the Internet)

The course will consist of 15 lectures on-line spread throughout the semester, four exams equally spaced during the semester and a final examination. Reading assignments will be posted in Moodle and weekly reading assignments will be made for the purpose of supplementing on-line instruction.

#### Instructors:

Adam Fahrenholz (acfahren) - Instructor

Email: [acfahren@ncsu.edu](mailto:acfahren@ncsu.edu)

Web Page: <http://harvest.cals.ncsu.edu/prestage-poultry-science/faculty-and-staff/faculty-and-epa/fahrenholz/?pageID=10476>

Phone: 919-515-5408

Office Location: 234C Scott Hall and online at [acfahren@ncsu.edu](mailto:acfahren@ncsu.edu)

Office Hours: On-line 15:00 to 17:00 MW and by appointment

Charles Stark (kesbensh) - Instructor

Email: [crstark@ksu.edu](mailto:crstark@ksu.edu)

Web Page: <http://www.grains.k-state.edu/igp/faculty-staff/stark/>

Phone: 7855324082

Fax: 7855324017

Office Location: Online at crstark@ksu.edu

Office Hours: Online 15:00 to 17:00 MW and by appointment

**Course Meetings:**

None

**Course Materials:**

Textbooks

None

Expenses

None

Materials

None

**Requisites and Restrictions:**

Prerequisites

ANS 150 (Intro in Animal Science), ANS 260 (Basic Swine Science) or  
Equivalent

Co-requisites

None

Restrictions

Restricted to non-ANS (Animal Science) students. ANS students cannot take the  
course for credit

**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	3 @ 50 points each for a total of 150 points	Project #1 - Feed Mill Manager Interview and Feed Plant Tour - Due 9/16/2016 Project #2 - Feed Equipment Project - Due 10/14/2016 Project #3 - Develop an ingredient specification sheet, write a standard operating procedure (SOP) - Due 11/11/2016
Exams	4 @ 100 points each for a total of 400	Exams will be given following Module 3 (Exam #1), Module 7 (Exam #2), Module 11 (Exam #3), and Module 15 (Exam #4)
Final Examination	1 @ 100 points	A comprehensive final will be given at the conclusion of the course.

### Letter Grades

This Course uses Standard NCSU Letter Grading:

631 ≤ A+ ≤ 650

605 ≤ A ≤ 630

585 ≤ A- ≤ 604

487 ≤ B+ ≤ 584

540 ≤ B ≤ 486

520 ≤ B- ≤ 539

501 ≤ C+ ≤ 519

475 ≤ C ≤ 500

455 ≤ C- ≤ 474

436 ≤ D+ ≤ 454

410 ≤ D ≤ 435

390 ≤ D- ≤ 409

0 ≤ F ≤ 389

### 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:**

Assignments must be completed on-line within the assigned time period and submitted to the instructor. Late assignments will not be accepted unless PRIOR permission has been granted.

**Attendance Policy:**

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

This course is a distance education format and does not meet face-to-face. Regular participation is required in regard to discussion boards, electronic mail correspondence, and completion of assignments. It is the student's responsibility to notify the instructor if he/she is unable to complete an assignment because of circumstances beyond his/her control.

**Absences Policy:**

None

**Makeup Work Policy:**

None

**Additional Excuses Policy:**

None

**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>

**Academic Honesty:**

See <http://policies.ncsu.edu/policy/pol-11-35-01> 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.

**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/](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.

Module 1 — 08/22/2016 - 08/26/2016

- Course Introduction and Resources
- Feed Industry Overview
- Feed Manufacturing History

Module 2 — 08/29/2016 - 09/02/2016

- Management Responsibility & Safety

Module 3 — 09/06/2016 - 09/09/2016

## Feed Mill Design, Material Handling Equipment

Module 4 — 09/12/2016 - 09/16/2016  
Receiving & Grinding Operations

Module 5 — 09/19/2016 - 09/23/2016  
Batching & Mixing Operations

Module 6 — 09/26/2016 - 09/30/2016  
Pelleting, Cooling, & PPLA Operations

Module 7 — 10/03/2016 - 10/07/2016  
Extrusion

Module 8 — 10/10/2016 - 10/14/2016  
QA Program – Receiving

Module 9 — 10/17/2016 - 10/21/2016  
QA Program – Manufacturing & Delivery

Module 10 — 10/24/2016 - 10/28/2016  
Regulations – cGMP's

Module 11 — 10/31/2016 - 11/04/2016  
Regulations - Bioterrorism/Bio-safety/ BSE regulations

Module 12 — 11/07/2016 - 11/11/2016  
Feed Mill reports

Module 13 — 11/14/2016 - 11/18/2016  
Inventory Control & Scheduling

Module 14 — 11/21/2016 - 12/02/2016  
Sanitation Plans & Preventive Maintenance

Module 15 — 12/05/2016 - 12/09/2016  
Ingredient Purchasing/Logistics

## MEMORANDUM

February 25, 2016

TO: Undergraduate Courses and Curricula Committee

FROM: Christopher Daubert, Head, Food, Bioprocessing and Nutrition Sciences

RE: Changes to the Nutrition Science Curriculum  
11NTSBS Sum1 2014

The deficiencies and challenges that have been identified in the Nutrition Science major are listed below, along with the associated recommended curricular changes to deal with those issues.

**1. Students' limited critical and creative thinking skills and lack of knowledge regarding approaches used in nutrition research, including their strengths and limitations.** [Students get only a brief introduction to study design in NTR 301. Whether they encounter these issues again depends on their nutrition elective selection.]

- The revised curriculum will include a new 3-credit hour course, NTR 302, Introduction to Nutrition Research, Communication and Careers, taken during a student's sophomore year. This course will reinforce concepts from LSC 101 (Critical and Creative Thinking in the Life Sciences)-- or introduce students to them if they did not come through the LSFY program-- by applying these concepts in the context of the approaches used in the study of diet and health.

**2. Diffuse curriculum structure and limited sense of community.**

Currently there is no opportunity early in the students' career to help them feel more a part of the program and to lay a foundation of specific expectations, knowledge and skills that faculty can draw on in the major classes that follow. (NTR 301, the introductory course, is taken by several hundred students from all across the university each semester).

- NTR 302, described above, will also fulfill this objective because its enrollment will primarily be limited (and of interest) to Nutrition majors and minors.

**3. Limited experience reading and interpreting original research, depending on elective selection, and limited experience writing scientific papers, also dependent on elective selection.**

- The revised curriculum will create a 3-credit hour requirement in a new category: Restricted Nutrition Elective. All courses in this group will require the writing of an annotated bibliography and/or research paper.

#### **4. Lack of specific courses required for post-graduate study.**

Most of the students who choose the Nutrition Science curriculum are planning on going into a health-related field. Program requirements/prerequisites for these fields typically require at least 1 semester of a true anatomy and physiology course.

- The new curriculum will remove HESM 478 (Exercise Physiology and Sport Science) as an option for the physiology requirement and put it instead on the Application Electives list. This will increase the Physiology requirement to 4 credit hours. (BIO 250 or BIO 212). Few students take HESM 478, therefore the impact on the enrollment in the other 2 classes will be minimal.

#### **Additional changes to accommodate the above recommendations.**

To make room in the curriculum for the new course (NTR 302) and the extra hour of Physiology, BCH 351 (4 cr) will no longer be required and instead will be moved to the Application Elective list. The principles of metabolism are adequately covered in NTR 401 (Advanced Nutrition and Metabolism).

The additional 3-hour Restricted Nutrition Elective requirement will be balanced by a reduction in the Nutrition Elective requirement from 12 to 9 credit hours.

#### **Other proposed changes to the curriculum**

- Move PO/ANS/NTR 415 Comparative Nutrition to the Application Electives list.

Although this class, which is taught by a faculty member outside of FBNS, includes some new information relative to species other than humans, its primary objectives are duplicative of material already covered in the required courses NTR 301 and NTR 401.

- Add the following courses to the Application Electives list:
  - BCH 351 General Biochemistry (4 cr)
  - PB 213 Plants and Civilization (3 cr)
  - GPH 425 Global Health and Physiology (3 cr maximum out of 6 cr; study abroad course)
  - HESM 478 Principles of Sports Science (3cr)
  - SOC 350 Food and Society (3 cr)
  - WGS 330 Women and Health (3cr)
  - HI 360 History of Agriculture (3cr)

#### **Impact on students currently in the program.**

These changes will have no impact on students currently in the program. Students will have the option to move into the new curriculum.

#### **Consultation with other departments.**

Not applicable. There are no changes in required courses that are taught outside the major.

**Proposed effective date: Summer 1 2016**

SIGNATURE PAGE  
CURRICULAR ACTION for 11NTSBS

Recommended By:

C. R. Paubert 2.25.16  
Head, Department Program Date

Recommended By:

M. J. Meneilly 3/4/16  
Chair, College Curriculum Committee Date

Endorsed By:

A. M. M. [Signature] 3/8/16  
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

FORMAT A  
(SEMESTER-BY-SEMESTER CURRICULUM DISPLAY)

Indicate display status: Proposed:  Proposed Effective Semester: **Summer 1 2016**

Degree/Plan Title: **Nutrition Science**

Concentration/Subplan Title:

Plan SIS Code: **11NTSBS**

Subplan SIS Code:

New Degree Audit required? Y

Critical Path Courses - Identify using the code (CP) which courses are considered critical path courses that 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
LSC 101 Critical Creative Thinking Life Sci	2	NTR 301 Intro to Human Nutrition	3 (CP)
LSC 103 Exploring Opportunities Life Sci	1	BIO 183 Intro Bio: Cellular & Molecular	4 (CP)
BIO 181 Intro Bio: Ecol, Evol, Biodiversity	4 (CP)	ENG 101 Academic Writing Research	4
MA 121 Elements of Calculus or MA 131 Calculus for Life & Mgt Science	3 (CP)	CH 221 Organic Chemistry I	3
CH 101 Chemistry-A Molecular Science	3 (CP)	CH 222 Organic Chemistry I Laboratory	1
CH 102 General Chemistry Lab	1		
GEP PE/Healthy Living Requirement*	1		
	<i>Total:15</i>		<i>Total:15</i>
SOPHOMORE YEAR			
FALL SEMESTER	CREDITS	SPRING SEMESTER	CREDITS
NTR 302 Introduction to Nutrition Research, Communication and Careers	3	FS 201 Intro to Food Science	3
CH 223 Organic Chemistry II	3	Application Elective <sup>2</sup>	3
CH 224 Organic Chemistry II Laboratory	1	Nutrition Elective <sup>1</sup>	3
ST 311 Introduction to Statistics	3	GEP Interdisciplinary Perspectives Requirement*	3
PSY 200 Intro to Psychology	3	Physiology Elective <sup>4</sup>	4
Free/Minor Elective <sup>5</sup>	3		
	<i>Total:16</i>		<i>Total:16</i>
JUNIOR YEAR			
FALL SEMESTER	CREDITS	SPRING SEMESTER	CREDITS
NTR 401 Advanced Human Nutrition and Metabolism	3	GN 311 Principles of Genetics	4
Nutrition Elective <sup>1</sup>	3	Restricted Nutrition Elective <sup>6</sup>	3
Application Elective <sup>2</sup>	3	GEP PE/Healthy Living Requirement *	1
Writing/Speaking Elective <sup>3</sup>	3	GEP Additional Breadth Requirement*	3
Free/Minor Elective <sup>5</sup>	3	CH 201 Chemistry: A Quantitative Science	3
		CH 202 Quantitative Chemistry – Lab	1
	<i>Total:15</i>		<i>Total:15</i>
SENIOR YEAR			
FALL SEMESTER	CREDITS	SPRING SEMESTER	CREDITS
MB351 General Microbiology	3	NTR 490 Capstone	4
MB 352 General Microbiology Lab	1	GEP Social Science Elective*	3
GEP Humanities Requirement*	3	GEP Humanities Requirement*	3
Nutrition Elective <sup>1</sup>	3	Physics 212 College Physics II	4
Physics 211 College Physics I	4		
	<i>Total:14</i>		<i>Total:14</i>
Minimum Credit Hours Required for Graduation : 120			



**Major/Program Footnotes:**

**Students should check with their adviser before electing to take any course with S/U grading if it is normally graded A,B,C,D,F.**

*A grade of C- or better is required in the following courses:*

LSC 101 Critical and Creative Thinking in the Life Sciences  
 BIO 181 Introductory Biology: Ecology, Evolution, and Biodiversity  
 BIO 183 Introductory Biology: Cellular and Molecular Biology  
 CH 101 Chemistry – A Molecular Science  
 ENG 101 Academic Writing & Research  
 FS 201 Introduction to Food Science  
 NTR 301 Introduction to Human Nutrition  
 NTR 302 Introduction to Nutrition Research, Communication and Careers  
 NTR 401 Advanced Human Nutrition and Metabolism  
 NTR 490 Capstone in Nutrition  
 IDS 211 Eating Through American History  
 NTR 220 Food and Culture  
 NTR 320 Nutrition Education  
 NTR 330 Public Health Nutrition  
 NTR 410 Maternal and Infant Nutrition  
 NTR 419 Human Nutrition and Chronic Disease  
 NTR 420 Applied Nutrition Education  
 NTR 421 Life Cycle Nutrition  
 NTR 454 Lactation, Milk and Nutrition  
 NTR /FS 555 Exercise Nutrition  
 NTR/FS 557 Nutraceuticals and Functional Foods

<sup>1</sup>*Nutrition Electives (choose 9 hours from the following courses):*

IDS 211 Eating Through American History (3cr)  
 NTR 220 Food and Culture (3cr)  
 NTR 320 Nutrition Education (3cr)  
 NTR 330 Public Health Nutrition (3cr)  
 NTR 410 Maternal and Infant Nutrition (3cr)  
 NTR 419 Human Nutrition and Chronic Disease (3cr)  
 NTR 420 Applied Nutrition Education (3cr)  
 NTR 421 Life Cycle Nutrition (3cr)  
 NTR 454 Lactation, Milk and Nutrition (3cr)  
 NTR /FS 555 Exercise Nutrition (3cr)  
 NTR/FS 557 Nutraceuticals and Functional Foods (3cr)

<sup>2</sup>*Application Electives (choose 6 hours from the following courses with at least two different disciplines represented; courses with a † have a prerequisite): **Courses highlighted in yellow are new to the list***

AEE 230 Introduction to Cooperative Extension (3cr)  
 AEE 325 Planning and Delivery of Non-Formal Education† (3cr)  
 AEE 478 Advanced Issues in Extension Education† (3cr) [*corrected title*]  
 ANT 374 Disease and Society (3cr)  
 ARE 201 Introduction to Agricultural and Resource Economics (3cr)  
 BCH 351 General Biochemistry (4 cr)  
 BIO/PB 414 Cell Biology† (3 cr)  
 BIO 421 Advanced Human Anatomy & Physiology† (3 cr)  
 BIO 426 Advanced Human Anatomy & Physiology Lab † (1 cr)

BIO 424 Endocrinology † (3 cr)  
 BIO 488 Neurobiology † (3 cr)  
 CS 224 Seeds, Biotechnology and Societies (3cr)  
 CS 230 Introduction to Agroecology (3 cr)  
 CS 430 Advanced Agroecology † (3 cr)  
 FS 330 Science of Food Preparation† (3cr)  
 FS 402 Chemistry of Food and Bioprocessed Materials† (4 cr)  
 FS 403 Analytical Techniques in Food & Bioprocessing Science † (4 cr)  
 FS 405 Food Microbiology† (3 cr)  
 FS 416 Quality Control in Food and Bioprocessing † (3cr)  
 FS 421 Food Preservation† (3 cr)  
 PB 213 Plants and Civilization (3 cr)  
 PB 215 Medicinal Plants (3cr)  
 PB 360 Ecology† (4 cr)  
 PO/ANS/NTR 415 Comparative Nutrition (3 cr)  
 STS 323 World Population and Food Prospects (3cr)  
 PRT 200 Leisure Behavior, Health and Wellness (3cr)  
 COM 332 Relational Communication† (3cr)  
 COM 362 Communication and Gender† (3cr)  
 COM 441 Ethical Issues in Communication† (3cr)  
 COM 466 Nonprofit Leadership and Development (3cr)  
 GPH 201 Fundamentals of Global Public Health (3cr)  
 GPH 425 Global Health and Physiology† (3 cr maximum out of 6 cr; study abroad course)  
 HI 360 History of Agriculture (3 cr)  
 HI 380 History of Nonprofits, Philanthropy and Social Change † (3cr)  
 HESM 478 Principles of Sports Science† (3cr)  
 PHI/STS 325 Bio-Medical Ethics (3cr)  
 PHI 420 Global Justice† (3cr)  
 PS 203 Introduction to Nonprofits (3cr)  
 PS 231 Introduction to International Relations (3cr)  
 PS 236 Issues in Global Politics (3cr)  
 PS 312 Introduction to Public Administration (3cr)  
 PSY 311 Social Psychology† (3cr)  
 PSY 312 Applied Psychology† (3cr)  
 PSY 360 Community Psychology Principles and Practice † (3cr)  
 PSY 376 Developmental Psychology (3cr)  
 PSY 410 Learning and Motivation† (3cr)  
 PSY 420 Cognitive Processes† (3cr)  
 PSY 430 Biological Psychology † (3cr)  
 PSY 431 Health Psychology † (3 cr)  
 SOC 241 Sociology of Agriculture and Rural Society (3cr)  
 SOC 311 Community Relationships† (3cr)  
 SOC 342 International Development† (3cr)  
 SOC 350 Food and Society (3 cr)  
 SOC 351 Population and Planning† (3cr)  
 SOC 381 Sociology of Medicine† (3cr)  
 SOC 404 Families and Work† (3cr)  
 SOC 440 Social Change† (3cr)  
 WGS 200 Introduction to Women's and Gender Studies (3cr)  
 WGS 330 Women and Health (3cr)

<sup>3</sup>*Writing and Speaking Elective (choose 1 of the following):*

COM 110 Public Speaking  
 COM 112 Interpersonal Communication  
 ENG 333 Communication for Science and Research

<sup>4</sup>*Physiology Elective (choose 1 of the following courses):*

BIO 212 Human Anatomy and Physiology (4cr)

BIO 250 Animal Anatomy and Physiology (4cr)

<sup>5</sup>*Free/Minor Electives (take 6 credit hours)*

These electives cannot be remedial nor can they be taken at an elementary level after you have taken comparable coursework at a more advanced level. They can be taken S/U unless they are being used to fulfill the requirements for a minor.

<sup>6</sup>*Restricted Nutrition Electives (choose 1 of the following):*

NTR 320 Nutrition Education (3 cr)

NTR 330 Public Health and Community Nutrition (3 cr)

NTR 410 Maternal and Infant Nutrition (3 cr) Spring

NTR 419 Human Nutrition and Chronic Disease (3cr)

NTR 554 Lactation, Milk and Nutrition (3cr)

NTR /FS 555 Exercise Nutrition (3cr)

NTR/FS 557 Nutraceuticals and Functional Foods (3cr)

**\*General Education Program (GEP) requirements and GEP Footnotes:**

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

- A. **Mathematical Sciences** (6 credit hours – one course with MA or ST prefix)  
Choose from the University approved GEP Mathematical Sciences course list or the following course(s) if completed as part of the Major requirements may fulfill part or all of this requirement: **MA 121 or 131; ST 311**
- 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: **BIO 181, 183; CH 101, 102, 201, 202**
- C. **Humanities** (6 credit hours selected from two different disciplines/course prefixes)  
Choose from the University approved GEP Humanities course list or the following course(s) if completed as part of the Major requirements may fulfill part or all of this requirement:
- D. **Social Sciences** (6 credit hours selected from two different disciplines/course prefixes)  
Choose from the University approved GEP Social Sciences course list or the following course(s) if completed as part of the Major requirements may fulfill part or all of this requirement: **PSY 200**
- 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
- G. **Interdisciplinary Perspectives** (5-6 credit hours)  
Choose from the University approved GEP Interdisciplinary Perspectives course list or the following course(s) if completed as part of the Major requirements may fulfill part or all of this requirement: **LSC 101**
- 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

<u>Degree/Plan Title:</u> <b>Nutrition Science</b>	<u>Plan SIS Code:</u> <b>11NTSBS</b>
<u>Concentration/Subplan Title:</u> <b>n/a</b>	<u>Subplan SIS Code:</u> <b>n/a</b>
<u>Indicate requirements status:</u> Current:                      Proposed: X	<u>Proposed Effective Semester:</u> <b>Summer 1 2016</b>
<u>New Degree Audit required?</u> (Y or N) <b>Y</b>	
<u>Critical Path Courses</u> - Identify using the code (CP) which courses are considered critical path courses that 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.	

<b>MAJOR FIELD OF STUDY REQUIREMENTS:</b>		
<i>Required Courses/Groups/ Electives:</i>	<i>Credit Hours</i>	<i>GEP category, if applicable</i>
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
<u>Math</u> MA 121 or 131 ST 311  <u>Sciences</u> LSC 101 BIO 181*, BIO 183* CH 101, CH 102, CH 201, CH 202* CH 221, CH 222, CH 223, CH 224 GN 311 PY 211, PY 212 MB 351, MB 352 PSY 200  FS 201* NTR 301* NTR 302* NTR 401* NTR 490*  <i>*C-required in these courses</i>  Nutrition Electives <sup>1*</sup>  Application Electives <sup>2</sup>  Writing/Speaking Elective <sup>3</sup>  Physiology Elective <sup>4</sup>  Restricted Nutrition Elective <sup>6*</sup> <i>*C-required in these courses</i>	3 (CP) 3  2 8 (CP) 8 (CP) 8 4 8 4 3 (CP)  3 3 3 3 4  9  6  3  4  3	Interdisciplinary Perspectives (2 hours) Natural Sciences (4 hours) Natural Sciences (3 hours)          Social Sciences (3 hours)
<u>Concentration Courses/Groups/Electives:</u>	n/a	

<b>Free Electives:</b>	6	
<b>Total credit hours under Major Field of Study:</b> <i>Minimum 27 hours required in program area.</i>	98 hours	
<b>COLLEGE REQUIREMENTS:</b>		
<b>Orientation Course(s):</b> LSC 103	1	
<b>Other:</b>		
<b>Total credit hours under College Requirements:</b>	1 Hours	

<b>NCSU GENERAL EDUCATION PROGRAM REQUIREMENTS</b>		<b>At least one of the following must be listed:</b>
<p><i>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.</i></p> <p><i>Specific courses should not be listed in any of the fields below other than ENG 101.</i></p>		<ol style="list-style-type: none"> <li>1 Choose course(s) from the University Approved GEP course list for this category.</li> <li>2 Minimum requirements are satisfied by Major/College course requirements.</li> <li>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.</li> <li>4 Co-requisite is satisfied by a Major/College course requirement.</li> <li>5 Choose course(s) from the University Approved GEP course lists for the Humanities/ Social Sciences/ Visual &amp; Performing Arts.</li> <li>6 Choose course(s) from the University Approved GEP course lists for Natural Sciences/Mathematical Sciences.</li> </ol>
<b>General Education Program Requirements:</b> <i>Minimum 39-40 hrs</i>	<b>Credit hours</b>	<b>How will the GEP requirement be met?</b> <b>(Choose applicable statement from 1-6 listed above)</b>
<b>Mathematical Sciences</b> (6 credits) (At least 1 course with MA or ST prefix) <i>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.</i>	0	(Choose statement 1, 2 or 3) Minimum requirements are satisfied by Major course requirements
<b>Natural Sciences</b> (7 credits) (At least 1 lab course or course with a lab) <i>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.</i>	0	(Choose statement 1, 2 or 3) Minimum requirements are satisfied by Major course requirements
<b>English 101 (C- or better required)</b> (4 credits)	4	ENG 101
<b>Humanities</b> (6 credits) (Courses from two different disciplines) <i>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.</i>	6	(Choose statement 1, 2 or 3) Choose course(s) from the University Approved GEP course list for this category.
<b>Social Sciences</b> (6 credits) (Courses from two different disciplines) <i>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.</i>	3	(Choose statement 1, 2 or 3) Course in major satisfies 3 credit hours of this requirement. Remaining hours must be chosen from the University Approved GEP course list for this category.
<b>Additional Breadth</b> (3 credits) (Choose approach that is different from the approach of the Major) <i>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.</i>	3	(Choose statement 5 or 6) Choose course(s) from the University Approved GEP course list for this category.
<b>Interdisciplinary Perspectives</b> (5 credits) <i>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.</i>	3	(Choose statement 1, 2 or 3) Course in major satisfies 2 credit hours of this requirement. Remaining hours must be chosen from the University Approved GEP course list for this category.
<b>Health and Exercise Studies</b> (2 credits) (Including one Fitness and Wellness course)	2	Choose course(s) from the University Approved GEP course list for this category.
<b>Total credit hours needed to complete GEP that are <u>not</u> satisfied as part of the Major/College requirements.</b>	<b>21 hours</b>	

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

### Major/Program Footnotes:

<sup>1</sup>*Nutrition Electives (choose 9 hours from the following courses):*

IDS 211 Eating Through American History (3cr)  
 NTR 220 Food and Culture (3cr)  
 NTR 320 Nutrition Education (3cr)  
 NTR 330 Public Health Nutrition (3cr)  
 NTR 410 Maternal and Infant Nutrition (3cr)  
 NTR 419 Human Nutrition and Chronic Disease (3cr)  
 NTR 420 Applied Nutrition Education (3cr)  
 NTR 421 Life Cycle Nutrition (3cr)  
 NTR 454 Lactation, Milk and Nutrition (3cr)  
 NTR /FS 555 Exercise Nutrition (3cr)  
 NTR/FS 557 Nutraceuticals and Functional Foods (3cr)

<sup>2</sup>*Application Electives (choose 6 hours from the following courses with at least two different disciplines represented; courses with a † have a prerequisite): **Courses highlighted in yellow are new to the list***

AEE 230 Introduction to Cooperative Extension (3cr)  
 AEE 325 Planning and Delivery of Non-Formal Education† (3cr)  
 AEE 478 Advanced Issues in Extension Education† (3cr) *[corrected title]*  
 ANT 374 Disease and Society (3cr)  
 ARE 201 Introduction to Agricultural and Resource Economics (3cr)  
 BCH 351 General Biochemistry (4 cr)  
 BIO/PB 414 Cell Biology† (3 cr)  
 BIO 421 Advanced Human Anatomy & Physiology† (3 cr)  
 BIO 426 Advanced Human Anatomy & Physiology Lab † (1 cr)  
 BIO 424 Endocrinology † (3 cr)  
 BIO 488 Neurobiology † (3 cr)  
 CS 224 Seeds, Biotechnology and Societies (3cr)  
 CS 230 Introduction to Agroecology (3 cr)  
 CS 430 Advanced Agroecology † (3 cr)  
 FS 330 Science of Food Preparation† (3cr)  
 FS 402 Chemistry of Food and Bioprocessed Materials† (4 cr)

FS 403 Analytical Techniques in Food & Bioprocessing Science † (4 cr)  
 FS 405 Food Microbiology† (3 cr)  
 FS 416 Quality Control in Food and Bioprocessing † (3cr)  
 FS 421 Food Preservation† (3 cr)  
 PB 213 Plants and Civilization (3 cr)  
 PB 215 Medicinal Plants (3cr)  
 PB 360 Ecology† (4 cr)  
 PO/ANS/NTR 415 Comparative Nutrition (3 cr)  
 STS 323 World Population and Food Prospects (3cr)  
 PRT 200 Leisure Behavior, Health and Wellness (3cr)  
 COM 332 Relational Communication† (3cr)  
 COM 362 Communication and Gender† (3cr)  
 COM 441 Ethical Issues in Communication† (3cr)  
 COM 466 Nonprofit Leadership and Development (3cr)  
 GPH 201 Fundamentals of Global Public Health (3cr)  
 GPH 425 Global Health and Physiology† (3 cr maximum out of 6 cr; study abroad course)  
 HI 360 History of Agriculture (3 cr)  
 HI 380 History of Nonprofits, Philanthropy and Social Change † (3cr)  
 HESM 478 Principles of Sports Science† (3cr)  
 PHI/STS 325 Bio-Medical Ethics (3cr)  
 PHI 420 Global Justice† (3cr)  
 PS 203 Introduction to Nonprofits (3cr)  
 PS 231 Introduction to International Relations (3cr)  
 PS 236 Issues in Global Politics (3cr)  
 PS 312 Introduction to Public Administration (3cr)  
 PSY 311 Social Psychology† (3cr)  
 PSY 312 Applied Psychology† (3cr)  
 PSY 360 Community Psychology Principles and Practice † (3cr)  
 PSY 376 Developmental Psychology (3cr)  
 PSY 410 Learning and Motivation† (3cr)  
 PSY 420 Cognitive Processes† (3cr)  
 PSY 430 Biological Psychology † (3cr)  
 PSY 431 Health Psychology † (3 cr)  
 SOC 241 Sociology of Agriculture and Rural Society (3cr)  
 SOC 311 Community Relationships† (3cr)  
 SOC 342 International Development† (3cr)  
 SOC 350 Food and Society (3 cr)  
 SOC 351 Population and Planning† (3cr)  
 SOC 381 Sociology of Medicine† (3cr)  
 SOC 404 Families and Work† (3cr)  
 SOC 440 Social Change† (3cr)  
 WGS 200 Introduction to Women's and Gender Studies (3cr)  
 WGS 330 Women and Health (3cr)

<sup>3</sup>*Writing and Speaking Elective (choose 1 of the following):*

COM 110 Public Speaking  
 COM 112 Interpersonal Communication  
 ENG 333 Communication for Science and Research

<sup>4</sup>*Physiology Elective (choose 1 of the following courses):*

BIO 212 Human Anatomy and Physiology (4cr)  
 BIO 250 Animal Anatomy and Physiology (4cr)

<sup>5</sup>*Free/Minor Electives (take 6 credit hours)*

These electives cannot be remedial nor can they be taken at an elementary level after you have taken comparable coursework at a more advanced level. They can be taken S/U unless they are being used to fulfill the requirements for a minor.

<sup>6</sup>*Restricted Nutrition Electives (choose 1 of the following):*

- NTR 320 Nutrition Education (3 cr)
- NTR 330 Public Health and Community Nutrition (3 cr)
- NTR 410 Maternal and Infant Nutrition (3 cr) Spring
- NTR 419 Human Nutrition and Chronic Disease (3cr)
- NTR 554 Lactation, Milk and Nutrition (3cr)
- NTR /FS 555 Exercise Nutrition (3cr)
- NTR/FS 557 Nutraceuticals and Functional Foods (3cr)



## MEMORANDUM

February 25, 2016

TO: Undergraduate Courses and Curricula Committee

FROM: Christopher Daubert, Department Head

RE: Changes to the Applied Nutrition Curriculum  
11NTSAN Sum1 2014

The deficiencies and challenges that have been identified in the Applied Nutrition concentration are listed below, along with the associated recommended curricular changes to deal with those issues.

**1. Students' limited critical and creative thinking skills and lack of knowledge regarding approaches used in nutrition research, including their strengths and limitations.** [Students get only a brief introduction to study design in NTR 301. Whether they encounter these issues again depends on their nutrition elective selection.]

- The revised curriculum will include a new 3-credit hour course, NTR 302, Introduction to Nutrition Research, Communication and Careers, taken during a student's sophomore year. This course will reinforce concepts from LSC 101 (Critical and Creative Thinking in the Life Sciences)-- or introduce students to them if they did not come through the LSFY program-- by applying these concepts in the context of the approaches used in the study of diet and health.

**2. Diffuse curriculum structure and limited sense of community.**

Currently there is no opportunity early in the students' career to help them feel more a part of the program and to lay a foundation of specific expectations, knowledge and skills that faculty can draw on in the major classes that follow. (NTR 301, the introductory course, is taken by several hundred students from all across the university each semester).

- NTR 302, described above, will also fulfill this objective because its enrollment will primarily be limited (and of interest) to Nutrition majors and minors.

**3. Limited experience reading and interpreting original research, depending on elective selection, and limited experience writing scientific papers, also dependent on elective selection.**

- The revised curriculum will create a 3-credit hour requirement in a new category: Restricted Nutrition Elective. All courses in this group will require the writing of an annotated bibliography and/or research paper.

#### **4. Lack of specific courses required for post-graduate study.**

Many of the students who choose the Applied Nutrition curriculum are planning to become registered dietitians, physician assistants, or nurses. Program requirements/prerequisites for these fields often require 2 semesters of inorganic/general chemistry and rarely require more than 1 semester of organic. All of these programs require at least 1 semester of a true anatomy and physiology course.

- The new curriculum will require CH 101/2, CH 201/2 and CH 220 instead of CH 101/2, CH 221/2 and CH 223/4. The total number of credit hours will remain the same.
- The new curriculum will remove HESM 478 (Exercise Physiology and Sport Science) as an option for the physiology requirement and put it instead on the Application Electives list. This will increase the Physiology requirement to 4 credit hours (BIO 250 or BIO 212). Few students take HESM 478, therefore the impact on the enrollment in the other 2 classes will be minimal.

#### **Additional changes to accommodate the above recommendations.**

To make room in the curriculum for the new course (NTR 302) and the extra hour of Physiology, BCH 351 (4 cr) will no longer be required and instead will be moved to the Application Elective list. The principles of metabolism are adequately covered in NTR 401 (Advanced Nutrition and Metabolism).

The additional 3-hour Restricted Nutrition Elective requirement will be balanced by a reduction in the Nutrition Elective requirement from 12 to 9 credit hours.

#### **Other proposed changes to the curriculum**

- Move PO/ANS/NTR 415 Comparative Nutrition to the Application Electives list.

Although this class, which is taught by a faculty member outside of FBNS, includes some new information relative to species other than humans, its primary objectives are duplicative of material already covered in the required courses NTR 301 and NTR 401.

- Add the following courses to the Application Electives list:
  - BCH 351 General Biochemistry (4 cr)
  - PB 213 Plants and Civilization (3 cr)
  - GPH 425 Global Health and Physiology (3 cr maximum out of 6 cr; study abroad course)
  - HESM 478 Principles of Sports Science (3cr)
  - SOC 350 Food and Society (3 cr)
  - WGS 330 Women and Health (3cr)
  - HI 360 History of Agriculture (3cr)

#### **Impact on students currently in the program.**

These changes will have no impact on students currently in the program. Students will have the option to move into the new curriculum.

**Consultation with other departments.**

CHEMISTRY:

On Tue, Feb 23, 2016 at 9:39 AM, Sarah Ash <sla@ncsu.edu> wrote:  
*Drs. Neyhart and Feducia,*

*We are in the process of revising the Applied Nutrition concentration.*

*Current chemistry requirements: 101/2; 221/2; 223/4*  
*Proposed requirements: 101/2; 201/2; 220*

*We currently have approximately 150 students in this concentration, however this will only apply to new students entering the curriculum in the fall of 2016 so the change in course-taking patterns will be gradual.*

*Please let me know if you foresee any problems with this change relative to enrollment capacity in your courses.*

*Thanks,*  
*Sarah*

**On Feb 23, 2016, at 9:54 AM, Jeremiah Feducia <jfeduci@ncsu.edu> wrote:**

Can you comment on which semester(s) you anticipate an increase in the 201 and 220 enrollment? In other words, do you plan on encouraging students to take 201 or 220 immediately following 101?

On Tue, Feb 23, 2016 at 9:57 AM, Sarah Ash <sla@ncsu.edu> wrote:

*We currently have 220 following 101, with 201 after that. Those could be reversed if you think that makes more sense.*

**On Feb 24, 2016, at 1:57 PM, Jeremiah Feducia <jfeduci@ncsu.edu> wrote:**

In any given academic year, of the 150 students, how many will be taking CH 220? Is it safe to assume that the number 150 is freshmen through seniors, therefore we can expect an increase of 40 or so in CH 220?

On Wed, Feb 24, 2016 at 3:09 PM, Sarah Ash <sla@ncsu.edu> wrote:

*I would say 40 is a good estimate.*

**On Feb 25, 2016, at 10:05 AM, Jeremiah Feducia <jfeduci@ncsu.edu> wrote:**

40 students should not disrupt anything we are doing. Therefore, we approve your proposed revisions

**Proposed effective date: Summer 1 2016**

SIGNATURE PAGE  
CURRICULAR ACTION for 11NTSAN

Recommended By:

CR Paulbert 2-25-16  
Head, Department/Program Date

Recommended By:

Mel Stenrud 3/4/16  
Chair, College Curriculum Committee Date

Endorsed By:

[Signature] 3/8/16  
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

FORMAT A  
(SEMESTER-BY-SEMESTER CURRICULUM DISPLAY)

Indicate display status: Proposed: **X** Proposed Effective Semester: **Summer 1 2016**

Degree/Plan Title: **Nutrition Science**

Concentration/Subplan Title: **Applied Nutrition**

Plan SIS Code: **11NTSBS**

Subplan SIS Code: **11NTSAN**

New Degree Audit required? **Y**

**Critical Path Courses** - Identify using the code (CP) which courses are considered critical path courses that 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
LSC 101 Critical Creative Thinking Life Sci	2	NTR 301 Intro to Human Nutrition	3 (CP)
LSC 103 Exploring Opportunities Life Sci	1	BIO 183 Intro Bio: Cellular & Molecular	4 (CP)
BIO 181 Intro Bio: Ecol, Evol, Biodiversity	4 (CP)	ENG 101 Academic Writing Research	4
MA 121 Elements of Calculus <b>or</b> MA 131 Calculus for Life & Mgt Science	3 (CP)	PSY 200 Intro to Psychology	3
CH 101 Chemistry-A Molecular Science	3		
CH 102 General Chemistry Lab	1		
GEP PE/Healthy Living Requirement*	1		
	<i>Total:15</i>		<i>Total:14</i>
SOPHOMORE YEAR			
FALL SEMESTER	CREDITS	SPRING SEMESTER	CREDITS
CH 220 Introductory Organic Chemistry	4	CH 201 Chemistry A Quantitative Science	3
NTR 302 Introduction to Nutrition Research, Communication and Careers	3	CH 202 Quantitative Chemistry Laboratory	1
ST 311 Introduction to Statistics	3	FS 201 Intro to Food Science	3
GEP Humanities Requirement*	3	Nutrition Elective <sup>1</sup>	3
Free/Minor Elective <sup>5</sup>	3	Application Elective <sup>2</sup>	3
		GEP Interdisciplinary Perspectives Requirement*	3
	<i>Total:16</i>		<i>Total:16</i>
JUNIOR YEAR			
FALL SEMESTER	CREDITS	SPRING SEMESTER	CREDITS
NTR 401 Advanced Human Nutrition and Metabolism	3	GN 311 Principles of Genetics	4
Physiology Elective <sup>4</sup>	4	Restricted Nutrition Elective <sup>6</sup>	3
Writing/Speaking Elective <sup>3</sup>	3	Application Elective <sup>2</sup>	3
Nutrition Elective <sup>1</sup>	3	GEP PE/Healthy Living Requirement *	1
Free/Minor Elective <sup>5</sup>	3	GEP Additional Breadth Requirement*	3
	<i>Total:16</i>		<i>Total:14</i>
SENIOR YEAR			
FALL SEMESTER	CREDITS	SPRING SEMESTER	CREDITS
MB351 General Microbiology	3	NTR 490 Capstone	4
MB 352 General Microbiology Lab	1	Application Elective <sup>2</sup>	3
Nutrition Elective <sup>1</sup>	3	GEP Humanities Requirement*	3
Application Elective <sup>2</sup>	3	Free/Minor Elective <sup>5</sup>	3
GEP Social Science Elective*	3		
Free/Minor Elective <sup>5</sup>	3		
	<i>Total:16</i>		<i>Total:13</i>
Minimum Credit Hours Required for Graduation : 120			

**Major/Program Footnotes:**

Students should check with their adviser before electing to take any course with S/U grading if it is normally graded A,B,C,D,F.

*A grade of C- or better is required in the following courses:*

LSC 101 Critical and Creative Thinking in the Life Sciences  
 BIO 181 Introductory Biology: Ecology, Evolution, and Biodiversity  
 BIO 183 Introductory Biology: Cellular and Molecular Biology  
 CH 101 Chemistry – A Molecular Science  
 ENG 101 Academic Writing & Research  
 FS 201 Introduction to Food Science  
 NTR 301 Introduction to Human Nutrition  
 NTR 302 Introduction to Nutrition Research, Communication and Careers  
 NTR 401 Advanced Human Nutrition and Metabolism  
 NTR 490 Capstone in Nutrition  
 IDS 211 Eating Through American History  
 NTR 220 Food and Culture  
 NTR 320 Nutrition Education  
 NTR 330 Public Health Nutrition  
 NTR 410 Maternal and Infant Nutrition  
 NTR 419 Human Nutrition and Chronic Disease  
 NTR 420 Applied Nutrition Education  
 NTR 421 Life Cycle Nutrition  
 NTR 454 Lactation, Milk and Nutrition  
 NTR /FS 555 Exercise Nutrition  
 NTR/FS 557 Nutraceuticals and Functional Foods

<sup>1</sup>*Nutrition Electives (choose 9 hours from the following courses):*

IDS 211 Eating Through American History (3cr)  
 NTR 220 Food and Culture (3cr)  
 NTR 320 Nutrition Education (3cr)  
 NTR 330 Public Health Nutrition (3cr)  
 NTR 410 Maternal and Infant Nutrition (3cr)  
 NTR 419 Human Nutrition and Chronic Disease (3cr)  
 NTR 420 Applied Nutrition Education (3cr)  
 NTR 421 Life Cycle Nutrition (3cr)  
 NTR 454 Lactation, Milk and Nutrition (3cr)  
 NTR /FS 555 Exercise Nutrition (3cr)  
 NTR/FS 557 Nutraceuticals and Functional Foods (3cr)

<sup>2</sup>*Application Electives (choose 12 hours from the following courses with at least two different disciplines represented; courses with a † have a prerequisite): **Courses highlighted in yellow are new to the list***

AEE 230 Introduction to Cooperative Extension (3cr)  
 AEE 325 Planning and Delivery of Non-Formal Education† (3cr)  
 AEE 478 Advanced Issues in Extension Education† (3cr) [corrected title]  
 ANT 374 Disease and Society (3cr)  
 ARE 201 Introduction to Agricultural and Resource Economics (3cr)  
 BCH 351 General Biochemistry (4 cr)  
 BIO/PB 414 Cell Biology† (3 cr)  
 BIO 421 Advanced Human Anatomy & Physiology† (3 cr)  
 BIO 426 Advanced Human Anatomy & Physiology Lab † (1 cr)

BIO 424 Endocrinology † (3 cr)  
 BIO 488 Neurobiology † (3 cr)  
 CS 224 Seeds, Biotechnology and Societies (3cr)  
 CS 230 Introduction to Agroecology (3 cr)  
 CS 430 Advanced Agroecology † (3 cr)  
 FS 330 Science of Food Preparation† (3cr)  
 FS 402 Chemistry of Food and Bioprocessed Materials† (4 cr)  
 FS 403 Analytical Techniques in Food & Bioprocessing Science † (4 cr)  
 FS 405 Food Microbiology† (3 cr)  
 FS 416 Quality Control in Food and Bioprocessing † (3cr)  
 FS 421 Food Preservation† (3 cr)  
 PB 213 Plants and Civilization (3 cr)  
 PB 215 Medicinal Plants (3cr)  
 PB 360 Ecology† (4 cr)  
 PO/ANS/NTR 415 Comparative Nutrition (3 cr)  
 STS 323 World Population and Food Prospects (3cr)  
 PRT 200 Leisure Behavior, Health and Wellness (3cr)  
 COM 332 Relational Communication† (3cr)  
 COM 362 Communication and Gender† (3cr)  
 COM 441 Ethical Issues in Communication† (3cr)  
 COM 466 Nonprofit Leadership and Development (3cr)  
 GPH 201 Fundamentals of Global Public Health (3cr)  
 GPH 425 Global Health and Physiology† (3 cr maximum out of 6 cr; study abroad course)  
 HI 380 History of Nonprofits, Philanthropy and Social Change † (3cr)  
 HI 360 History of Agriculture (3cr)  
 HESM 478 Principles of Sports Science† (3cr)  
 PHI/STS 325 Bio-Medical Ethics (3cr)  
 PHI 420 Global Justice† (3cr)  
 PS 203 Introduction to Nonprofits (3cr)  
 PS 231 Introduction to International Relations (3cr)  
 PS 236 Issues in Global Politics (3cr)  
 PS 312 Introduction to Public Administration (3cr)  
 PSY 311 Social Psychology† (3cr)  
 PSY 312 Applied Psychology† (3cr)  
 PSY 360 Community Psychology Principles and Practice † (3cr)  
 PSY 376 Developmental Psychology (3cr)  
 PSY 410 Learning and Motivation† (3cr)  
 PSY 420 Cognitive Processes† (3cr)  
 PSY 430 Biological Psychology † (3cr)  
 PSY 431 Health Psychology † (3 cr)  
 SOC 241 Sociology of Agriculture and Rural Society (3cr)  
 SOC 311 Community Relationships† (3cr)  
 SOC 342 International Development† (3cr)  
 SOC 350 Food and Society (3 cr)  
 SOC 351 Population and Planning† (3cr)  
 SOC 381 Sociology of Medicine† (3cr)  
 SOC 404 Families and Work† (3cr)  
 SOC 440 Social Change† (3cr)  
 WGS 200 Introduction to Women's and Gender Studies (3cr)  
 WGS 330 Women and Health (3cr)

<sup>3</sup>*Writing and Speaking Elective (choose 1 of the following):*

COM 110 Public Speaking  
 COM 112 Interpersonal Communication  
 ENG 333 Communication for Science and Research

<sup>4</sup>*Physiology Elective (choose one of the following courses):*

- BIO 212 Human Anatomy and Physiology (4cr)
- BIO 250 Animal Anatomy and Physiology (4cr)

<sup>5</sup>*Free/Minor Electives (take 12 credit hours)*

These electives cannot be remedial nor can they be taken at an elementary level after you have taken comparable coursework at a more advanced level. They can be taken S/U unless they are being used to fulfill the requirements for a minor.

<sup>6</sup>*Restricted Nutrition Electives (choose one of the following):*

- NTR 320 Nutrition Education (3 cr)
- NTR 330 Public Health and Community Nutrition (3 cr)
- NTR 410 Maternal and Infant Nutrition (3 cr) Spring
- NTR 419 Human Nutrition and Chronic Disease (3cr)
- NTR 554 Lactation, Milk and Nutrition (3cr)
- NTR /FS 555 Exercise Nutrition (3cr)
- NTR/FS 557 Nutraceuticals and Functional Foods (3cr)

**\*General Education Program (GEP) requirements and GEP Footnotes:**

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

- A. **Mathematical Sciences** (6 credit hours – one course with MA or ST prefix)  
Choose from the University approved GEP Mathematical Sciences course list or the following course(s) if completed as part of the Major requirements may fulfill part or all of this requirement: **MA 121 or 131; ST 311**
- 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: **BIO 181, 183; CH 101, 102, 201, 202**
- C. **Humanities** (6 credit hours selected from two different disciplines/course prefixes)  
Choose from the University approved GEP Humanities course list or the following course(s) if completed as part of the Major requirements may fulfill part or all of this requirement:
- D. **Social Sciences** (6 credit hours selected from two different disciplines/course prefixes)  
Choose from the University approved GEP Social Sciences course list or the following course(s) if completed as part of the Major requirements may fulfill part or all of this requirement: **PSY 200**
- 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
- G. **Interdisciplinary Perspectives** (5-6 credit hours)  
Choose from the University approved GEP Interdisciplinary Perspectives course list or the following course(s) if completed as part of the Major requirements may fulfill part or all of this requirement: **LSC 101**
- 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

<u>Degree/Plan Title:</u> <b>Nutrition Science</b>	<u>Plan SIS Code:</u> <b>11NTSBS</b>
<u>Concentration/Subplan Title:</u> <b>Applied Nutrition</b>	<u>Subplan SIS Code:</u> <b>11NTSAN</b>
<u>Indicate requirements status:</u> Current:                      Proposed: X	<u>Proposed Effective Semester:</u> <b>Summer 1 2016</b>
<u>New Degree Audit required?</u> (Y or N) <b>Y</b>	
<u>Critical Path Courses</u> - Identify using the code (CP) which courses are considered critical path courses that 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.	

<b>MAJOR FIELD OF STUDY REQUIREMENTS:</b>		
<i>Required Courses/Groups/ Electives:</i>	<i>Credit Hours</i>	<i>GEP category, if applicable</i>
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
<b>Math</b> MA 121 or 131 ST 311	3 (CP) 3	
<b>Sciences</b> LSC 101 BIO 181*, BIO 183* CH 101, CH 102* CH 201, 202, CH 220 GN 311 MB 351, MB 352 PSY 200  FS 201* NTR 301* NTR 302* NTR 401* NTR 490*	2 8 (CP) 4 (CP) 8 4 4 3 (CP)  3 3 3 3 4	Interdisciplinary Perspectives (2 hours) Natural Sciences (4 hours) Natural Sciences (3 hours)          Social Sciences (3 hours)
*C-required in these courses		
Nutrition Electives <sup>1*</sup>	9	
Application Electives <sup>2</sup>	12	
Writing/Speaking Elective <sup>3</sup>	3	
Physiology Elective <sup>4</sup>	4	
Restricted Nutrition Elective <sup>6*</sup> *C-required in these courses	3	
<u>Concentration Courses/Groups/Electives:</u>	n/a	

<b>Free Electives:</b>	12	
<b>Total credit hours under Major Field of Study:</b> <i>Minimum 27 hours required in program area.</i>	<b>98 hours</b>	
<b>COLLEGE REQUIREMENTS:</b>		
<b>Orientation Course(s):</b> LSC 103	1	
<b>Other:</b>		
<b>Total credit hours under College Requirements:</b>	<b>1 Hours</b>	

<b>NCSU GENERAL EDUCATION PROGRAM REQUIREMENTS</b>		<b>At least one of the following must be listed:</b>
<p><i>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.</i></p> <p><i>Specific courses should not be listed in any of the fields below other than ENG 101.</i></p>		<ol style="list-style-type: none"> <li>1 Choose course(s) from the University Approved GEP course list for this category.</li> <li>2 Minimum requirements are satisfied by Major/College course requirements.</li> <li>3 Major/College course requirement satisfies <u>X</u> credit hrs of this requirement. Remaining hours required must be chosen from the University Approved GEP course list for the category.</li> <li>4 Co-requisite is satisfied by a Major/College course requirement.</li> <li>5 Choose course(s) from the University Approved GEP course lists for the Humanities/ Social Sciences/ Visual &amp; Performing Arts.</li> <li>6 Choose course(s) from the University Approved GEP course lists for Natural Sciences/Mathematical Sciences.</li> </ol>
<b>General Education Program Requirements:</b> <i>Minimum 39-40 hrs</i>	<b>Credit hours</b>	<b>How will the GEP requirement be met?</b> <b>(Choose applicable statement from 1-6 listed above)</b>
<b>Mathematical Sciences</b> (6 credits) (At least 1 course with MA or ST prefix) <i>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.</i>	0	(Choose statement 1, 2 or 3) <i>Minimum requirements are satisfied by Major course requirements</i>
<b>Natural Sciences</b> (7 credits) (At least 1 lab course or course with a lab) <i>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.</i>	0	(Choose statement 1, 2 or 3) <i>Minimum requirements are satisfied by Major course requirements</i>
<b>English 101</b> (C- or better required) (4 credits)	4	ENG 101
<b>Humanities</b> (6 credits) (Courses from two different disciplines) <i>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.</i>	6	(Choose statement 1, 2 or 3) <i>Choose course(s) from the University Approved GEP course list for this category.</i>
<b>Social Sciences</b> (6 credits) (Courses from two different disciplines) <i>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.</i>	3	(Choose statement 1, 2 or 3) <i>Course in major satisfies 3 credit hours of this requirement. Remaining hours must be chosen from the University Approved GEP course list for this category.</i>
<b>Additional Breadth</b> (3 credits) (Choose approach that is different from the approach of the Major) <i>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.</i>	3	(Choose statement 5 or 6) <i>Choose course(s) from the University Approved GEP course list for this category.</i>
<b>Interdisciplinary Perspectives</b> (5 credits) <i>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.</i>	3	(Choose statement 1, 2 or 3) <i>Course in major satisfies 2 credit hours of this requirement. Remaining hours must be chosen from the University Approved GEP course list for this category.</i>
<b>Health and Exercise Studies</b> (2 credits) (Including one Fitness and Wellness course)	2	<i>Choose course(s) from the University Approved GEP course list for this category.</i>
<b>Total credit hours needed to complete GEP that are not satisfied as part of the Major/College requirements.</b>	<b>21 hours</b>	

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

### Major/Program Footnotes:

<sup>1</sup>*Nutrition Electives (choose 9 hours from the following courses):*

IDS 211 Eating Through American History (3cr)  
 NTR 220 Food and Culture (3cr)  
 NTR 320 Nutrition Education (3cr)  
 NTR 330 Public Health Nutrition (3cr)  
 NTR 410 Maternal and Infant Nutrition (3cr)  
 NTR 419 Human Nutrition and Chronic Disease (3cr)  
 NTR 420 Applied Nutrition Education (3cr)  
 NTR 421 Life Cycle Nutrition (3cr)  
 NTR 454 Lactation, Milk and Nutrition (3cr)  
 NTR /FS 555 Exercise Nutrition (3cr)  
 NTR/FS 557 Nutraceuticals and Functional Foods (3cr)

<sup>2</sup>*Application Electives (choose 12 hours from the following courses with at least two different disciplines represented; courses with a † have a prerequisite): **Courses highlighted in yellow are new to the list***

AEE 230 Introduction to Cooperative Extension (3cr)  
 AEE 325 Planning and Delivery of Non-Formal Education† (3cr)  
 AEE 478 Advanced Issues in Extension Education† (3cr) [corrected title]  
 ANT 374 Disease and Society (3cr)  
 ARE 201 Introduction to Agricultural and Resource Economics (3cr)  
 BCH 351 General Biochemistry (4 cr)  
 BIO/PB 414 Cell Biology† (3 cr)  
 BIO 421 Advanced Human Anatomy & Physiology† (3 cr)  
 BIO 426 Advanced Human Anatomy & Physiology Lab † (1 cr)  
 BIO 424 Endocrinology † (3 cr)  
 BIO 488 Neurobiology † (3 cr)  
 CS 224 Seeds, Biotechnology and Societies (3cr)  
 CS 230 Introduction to Agroecology (3 cr)  
 CS 430 Advanced Agroecology † (3 cr)  
 FS 330 Science of Food Preparation† (3cr)  
 FS 402 Chemistry of Food and Bioprocessed Materials† (4 cr)

FS 403 Analytical Techniques in Food & Bioprocessing Science † (4 cr)  
 FS 405 Food Microbiology† (3 cr)  
 FS 416 Quality Control in Food and Bioprocessing † (3cr)  
 FS 421 Food Preservation† (3 cr)  
 PB 213 Plants and Civilization (3 cr)  
 PB 215 Medicinal Plants (3cr)  
 PB 360 Ecology† (4 cr)  
 PO/ANS/NTR 415 Comparative Nutrition (3 cr)  
 STS 323 World Population and Food Prospects (3cr)  
 PRT 200 Leisure Behavior, Health and Wellness (3cr)  
 COM 332 Relational Communication† (3cr)  
 COM 362 Communication and Gender† (3cr)  
 COM 441 Ethical Issues in Communication† (3cr)  
 COM 466 Nonprofit Leadership and Development (3cr)  
 GPH 201 Fundamentals of Global Public Health (3cr)  
 GPH 425 Global Health and Physiology† (3 cr maximum out of 6 cr; study abroad course)  
 HI 360 History of Agriculture (3cr)  
 HI 380 History of Nonprofits, Philanthropy and Social Change † (3cr)  
 HESM 478 Principles of Sports Science† (3cr)  
 PHI/STS 325 Bio-Medical Ethics (3cr)  
 PHI 420 Global Justice† (3cr)  
 PS 203 Introduction to Nonprofits (3cr)  
 PS 231 Introduction to International Relations (3cr)  
 PS 236 Issues in Global Politics (3cr)  
 PS 312 Introduction to Public Administration (3cr)  
 PSY 311 Social Psychology† (3cr)  
 PSY 312 Applied Psychology† (3cr)  
 PSY 360 Community Psychology Principles and Practice † (3cr)  
 PSY 376 Developmental Psychology (3cr)  
 PSY 410 Learning and Motivation† (3cr)  
 PSY 420 Cognitive Processes† (3cr)  
 PSY 430 Biological Psychology † (3cr)  
 PSY 431 Health Psychology † (3 cr)  
 SOC 241 Sociology of Agriculture and Rural Society (3cr)  
 SOC 311 Community Relationships† (3cr)  
 SOC 342 International Development† (3cr)  
 SOC 350 Food and Society (3 cr)  
 SOC 351 Population and Planning† (3cr)  
 SOC 381 Sociology of Medicine† (3cr)  
 SOC 404 Families and Work† (3cr)  
 SOC 440 Social Change† (3cr)  
 WGS 200 Introduction to Women's and Gender Studies (3cr)  
 WGS 330 Women and Health (3cr)

<sup>3</sup>*Writing and Speaking Elective (choose 1 of the following):*

COM 110 Public Speaking  
 COM 112 Interpersonal Communication  
 ENG 333 Communication for Science and Research

<sup>4</sup>*Physiology Elective (choose 1 of the following courses):*

BIO 212 Human Anatomy and Physiology (4cr)  
 BIO 250 Animal Anatomy and Physiology (4cr)

<sup>5</sup>*Free/Minor Electives (take 12 credit hours)*

These electives cannot be remedial nor can they be taken at an elementary level after you have taken comparable coursework at a more advanced level. They can be taken S/U unless they are being used to fulfill the requirements for a minor.

<sup>6</sup>*Restricted Nutrition Electives (choose 1 of the following):*

- NTR 320 Nutrition Education (3 cr)
- NTR 330 Public Health and Community Nutrition (3 cr)
- NTR 410 Maternal and Infant Nutrition (3 cr) Spring
- NTR 419 Human Nutrition and Chronic Disease (3cr)
- NTR 554 Lactation, Milk and Nutrition (3cr)
- NTR /FS 555 Exercise Nutrition (3cr)
- NTR/FS 557 Nutraceuticals and Functional Foods (3cr)

## ECE 466 Course Syllabus

### ECE 466 - Compiler Optimization and Scheduling

**Section 001**

**FALL 2015**

**3 Credit Hours**

#### Course Description

Provide insight into current compiler designs dealing with present and future generations of high performance processors and embedded systems. Introduce basic concepts in scanning and parsing.

Investigate in depth program representation, dataflow analysis, scalar optimization, memory disambiguation, and interprocedural optimizations. Examine hardware/software trade-offs in the design of high performance processors, in particular VLIW versus dynamically scheduled architectures. Investigate back-end code generation techniques related to instruction selection, instruction scheduling for local, cyclic and global acyclic code, and register allocation and its interactions with scheduling and optimization.

#### Learning Outcomes

After taking this course, students will be able to:

1. Describe the fundamental principles of compiler design and the purpose of compiler optimizations.
2. Describe technical approaches for program representation, scalar optimization, dataflow analysis, instruction selection, scheduling, and register allocation.
3. Apply concepts in program representation, scalar optimization, dataflow analysis, scheduling, and register allocation to optimize code by hand.
4. Apply principles of compiler design to implement in code a compiler or sub-component of a compiler.
5. Describe and apply techniques for evaluating the performance of a program before and after optimization.

#### Course Structure

This course is designed to give the senior student an in-depth understanding of the workings of a performance-oriented compiler. This goal is achieved by detailed study of real compiler techniques and via quantitative tradeoff analysis through programming and experimentation. The techniques learned are also useful for hand optimization of code.

Lecture will be used either to teach the high level concepts or to provide tutorials for important programming concepts related to compiler design. To make room for programming tutorials in class, some material may be recorded and made available online for viewing outside of class.

The concepts presented in lecture will be reinforced through short handwritten homeworks and programming projects that require students to apply what they have learned by implementing a compiler or sub-component of a compiler. The programming projects are challenging and are designed to teach

students the skills needed to acquire a position as a compiler engineer. The last programming project will be due during Dead Week.

## Course Policies

Wolfware will be used as the course website. Login to <http://wolfware.ncsu.edu> and select this course from the list of options. Check the website often (at least 3 times per week). All assignments and course notes will be passed out via the website only. Note, there may only be an ECE 566 version of the site, and ECE 466 students will have access.

The required message board and social networking application is Piazza. You should have received an email asking you to sign up. It's free and required. Please use Piazza to contact the instructor or TA about anything related to the course. To send anonymous feedback to the instructor and TA's, post a private anonymous message on Piazza--your anonymity will be preserved. Also, please be professional in your posting:

- Do not post off-color jokes, offensive material, job listings, for-sale ads, virus alerts, etc.
- Do not post homework solutions.
- Do not post any code that may be directly used as a partial solution for programming assignments. You may however create hypothetical problems and post solution code for those, provided the context of the hypothetical problem is not too similar to an assignment.

If the message board is abused, it will be deleted, and, if applicable, the abusers will be referred to the Office of Student Conduct.

In order to complete some programming assignments, students will need access to specific software applications. Students may install this software on their own computer, as it is available for free and will run on most platforms. Also, the instructor will make it available through the Virtual Computing Lab ([vcl.ncsu.edu](http://vcl.ncsu.edu)) and via a VirtualBox Appliance that students can install on their own computer. To use the VirtualBox Appliance, students will need to download the VirtualBox application for free from Oracle and install it on their computer. Students are encouraged to setup their infrastructure as early as possible in the semester so that it does not prevent completion of the first programming project.

Lectures will be recorded (barring technical glitches) and made available through the DELTA MediaSite service. These recordings are meant as a resource for deeper review of material covered in class not as a substitute for attending class. This is not an online course, so there is no guarantee that all material covered during class will be available through a recording!

Also, NC State reserves the right to use the recordings in the future. By your continued participation in this recorded course, you are giving your permission to be recorded.

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## Instructors

**Dr. James M Tuck III** (jtuck) - *Instructor*

**Email:** [jtuck@ncsu.edu](mailto:jtuck@ncsu.edu)

**Web Page:** <http://go.ncsu.edu/tuck>

**Phone:** 919-513-0923

**Fax:** 919-513-7075

**Office Location:** Engineering Building II (EB2)

**Office Hours:** TBA

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## Course Meetings

### Lecture

**Days:** MW

**Time:** 2:20pm - 3:35pm

**Campus:** Centennial

**Location:** TBD

*This meeting is required.*

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## Course Materials

### Textbooks

**Engineering a Compiler** - *Keith Cooper and Linda Torczon*

**Edition:** 2nd

**ISBN:** 1-55860-695-X

**Cost:** \$61

*This textbook is optional.*

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### Expenses

None.

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### Materials

None.

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## Requisites and Restrictions

### Prerequisites

1. ECE 209 or competence in any machine language programming.
2. ECE 309, CSC 316, or proficiency in either C or C++ programming using advanced data structures, like hash tables and linked lists. Students often struggle with the programming assignments in this class, if you are uncertain about your programming skills, contact the instructor.

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### Co-requisites

None.

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### Restrictions

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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
Programming Projects	45	<p>There will be approximately 7 programming assignments. These assignments are designed to teach and train you to become a compiler engineer and will provide you with the skills needed to apply for jobs as a compiler engineer in industry.</p> <p>Students registered for ECE 466 will have less requirements on each project than students registered for 566. 466 students will be encouraged to work in teams of two. Evidence of copying or other unauthorized collaboration will be investigated as a potential academic integrity violation.</p> <p>These assignments will be the bulk of the work in the class making up 45% of your final grade.</p> <p>The last Programming Project will be due during dead week.</p>
Homework	10	<p>There will be approximately four homework assignments this semester. It may be a required post on Piazza, a short problem set, or a few quiz questions on Moodle. All graded homework is to be done individually and will be submitted electronically. While you are permitted to consult with other students, the instructor, and the TAs to formulate your answers, it is crucial that you know</p>

		how to do every homework assignment on your own. Furthermore, you are not allowed to submit someone else's work as your own. Evidence of copying will be investigated as a potential academic integrity violation.
Mid-term Exam	15	The mid-term exam will be held during a regularly scheduled lecture. It includes all material covered previously in the semester. It may draw from material covered in lecture, in homework assignments, or in programming projects.
Final Exam	30	The final exam is comprehensive and may cover all topics and assignments.

### Letter Grades

#### This Course uses Standard NCSU Letter Grading Scale

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>.

Student must complete all homework assignments (not projects) and earn a C or better.

### 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 are not accepted without prior approval from the instructor.

### Attendance Policy

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

### **Attendance Policy**

Students are expected to attend class. Any material covered during lecture may appear on an exam.

### **Absences Policy**

University approved absences (i.e. illness, official University business) will be excused and make-up work will be allowed. Other absences may be excused on a case-by-case basis by the instructor; if excused, make-up work will be allowed.

### **Makeup Work Policy**

For all excused absences that result in missed assignments, the instructor will either allow late submission of the assignment or waive the assignment (if it's not worth many points). For example, the instructor may waive a homework if it interferes with posting solutions in a timely manner before an exam, but programming projects would never be waived since they are a large part of the student's grade.

In the case of late submission, they should be submitted within 48 hours after the student returns to school or has recovered from illness. If more time is needed to complete the assignment, students must request an extension in advance of the 48 hour deadline.

Make-up exams will be scheduled on a case-by-case basis.

### **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.

**Electronically-hosted Components:** Wolfware, Piazza, Virtual Computing Lab

## **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/](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.  
TBD

# Course Syllabus

## MES 300 – Systems Engineering

**Section 605**

**Offered in Fall**

**4 Credit Hour**

### Course Description

This course provides an introduction to the theory and practice of formal systems engineering. Students are exposed to systems thinking, systems modeling and performing engineering design within a formal systems engineering framework. They will perform requirements definition and analysis, system architecting, test and integration plan development, economic evaluation of alternatives, and formal technical reviews.

### Learning Outcomes

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

1. Explain what it means to think in terms of systems and define a design component in terms of the role it plays in its system hierarchy.
2. Represent systems from different perspectives using various system modeling tools.
3. Qualitatively evaluate how design decisions impact other elements in a system and how to consider all dimensions of these impacts (technical, people, training, disposal, Mfg.,....) when initiating change.
4. Explain what Systems Engineering is and the benefit of following a SE approach to engineering design.
5. Identify user requirements and write them in the form of system and sub-system specifications.
6. Perform requirements analysis and system architecting.
7. Develop and execute sub-system/system test and integration plans.
8. Formally research, evaluate and document alternative design options.
9. Work on a team which follows a specific system engineering methodology to design and build a given product.
10. Develop and deliver professional oral presentations for formal technical reviews.
11. Develop a project Work Breakdown Structure and project gantt chart.

## Course Structure

This course will be a combination of lectures, structured in-class learning activities, and a team based systems engineering design project. For the design project, students will be given a needs description for a system to be designed. Students will work on teams to perform all aspects of the system engineering methodology to design and build a product which meets the customer requirements. At the Preliminary Design Review, each team will be split in to sub-teams and each sub-team will be assigned a specific part of the design based on the system architecture. Between the Critical Design Review and the Sub-System Testing, all communication between the sub-teams must go through the instructor. All sub-systems will be individually tested and then students will perform system integration. Local engineers will serve as the customers and will attend all formal technical reviews.

### Captured Lectures

This course will be captured and distributed via the Internet and/or electronic media as part of the Engineering Online (EOL) program for the distance students. These video recordings may contain an image of you entering the classroom, asking a questions or being a part of the studio class. Please notify Dr. Linda Krute, Director of EOL, in writing at ldkrute@ncsu.edu if you DO NOT want your image to be included in the lecture presentation. If we do not hear from you after the first week of the class, we will assume that you are in agreement with this procedure.

## Instructors

**Bill Fortney** (wbfortne) - *Instructor*

**Email:** [wbfortne@ncsu.edu](mailto:wbfortne@ncsu.edu)

**Phone:** 252-514-5956

**Office Location:** Redd 106

**Office Hours:** MWF 11:00-12:00

## Course Meetings

### Lecture

**Days:** M, W, F **Time:** 9:40am-11:00am **Campus:** Havelock **Location:** Redd Room 108

**Campus:** **Location:** *This meeting is required.*

### Course Materials

#### Textbooks

**None – Students will receive an electronic course reading packet**

#### Expenses

None.

#### Materials

None.

## Requisites and Restrictions

### Prerequisites

MAE 206 (C or better)

### Co-requisites

none

### **Restrictions**

Junior Standing

### **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 and will be required to be in Havelock, NC for Systems Integration day.

### **Safety & Risk Assumptions**

None

## Grading

### Grade Components

Component	Weight
Exam #1	15%
Exam #2	20%
Homework	30%
<b>Team Design Project (Group – Adjusted for Team Evaluations)</b> 25%	35%
<ul style="list-style-type: none"><li>• SRR Dry run</li><li>• <b>System Requirements Review</b></li><li>• PDR Dry run</li><li>• <b>Preliminary Design Review</b></li><li>• Sub-System CDR</li><li>• CDR Dry Run Nov 2</li><li>• <b>Critical Design Review</b></li><li>• Sub-System Demo</li><li>• System Integration</li><li>• <b>Final Presentation/System Demo</b></li></ul>	
<b>Team Design Project (Individual)</b> 10%	
<ul style="list-style-type: none"><li>• Performance as Team Leader</li><li>• Readiness at Sub-System Demo</li></ul>	

### 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](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](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](http://www.ncsu.edu/policies/academic_affairs/grades_undergrad/REG02.50.3.php).

## Late Assignments

All 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 class 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 class 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 (919) 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](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 Excused 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](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](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, (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://www.ncsu.edu/policies/academic\\_affairs/courses\\_undergrad/REG02.20.1.php](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](http://www.ncsu.edu/policies/campus_environ) or [http://www.ncsu.edu/equal\\_op](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**

Given in course moodle site

# Course Syllabus

## MES 401/402 – MES Capstone Design I & II

### Section 605

Fall MES 401 / Spring MES 402

3 Credit Hour (MES 401) 4 Credit Hour (MES 402)

### Course Description

This course sequence is a two semester senior capstone engineering design and manufacturing experience. This capstone experience is the culmination of the MES student's undergraduate education experience. Working in teams, students perform engineering design to solve a real-world engineering problem supplied by an industry partner. In MES 401 & MES 402, students follow a formal systems engineering approach to manage their design project through the completion of a System Requirements Review, a Conceptual Design Review, a Preliminary Design Review, a Detailed Design Review, and a Critical Design Review. Students develop written and verbal communication skills through reports and presentations. Students also gain insight into engineering design practices through guest lectures from local engineers.

### Learning Outcomes

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

1. Investigate an open-ended "real-world" engineering problem and define goals and objectives for its solution.
2. Create and maintain an engineering journal.
3. Demonstrate independent learning skills by devising and investigating feasible ideas.
4. Demonstrate the ability to work effectively in engineering teams to resolve conflict and meet quantitative engineering objectives established during the project.
5. Effectively communicate technical information through engineering drawings, written reports, and oral presentations (formal & informal).
6. Understand and utilize mechanical engineering design and analysis techniques.
7. Demonstrate proficiency in creating and understanding design drawings.
8. Demonstrate proficiency in using state of the art software and other electronic tools.
9. Create and execute a Systems Engineering Management Plan complete with information such as a project management plan, project budget and life-cycle cost analysis.
10. Clearly request and exchange quantitative information.
11. Analyze and optimize a design in relation to life-cycle parameters such as performance, cost, safety, manufacturability, reliability, and maintainability.

## **Course Structure**

The MES 401/MES 402 capstone sequence is composed of two main focus areas – Design and Manufacturing Experience.

The Design focus is achieved with an industry sponsor providing a real-world problem. The students are split into instructor-assigned design teams and are required to design a product which will solve the sponsor's problem. Students must adapt and follow the formal systems engineering model when creating their design. Specific deliverables are defined with the project sponsor, but most design projects will end with at least a set of production ready drawings.

The Manufacturing Experience focus is achieved by having each student attend sixteen hours of machining training where they will learn the basic operation of machines such as a lathe and milling machine. The students will also learn how engineering design decisions impact the manufacturability of parts.

To facilitate both focus areas of the course, the following components will be present in the course:

### **Weekly Lectures**

Weekly lectures are used to review and discuss applicable subjects such as project requirements, systems engineering design steps, analysis techniques, design for manufacturability, legal/safety/ethical issues in design, and various workplace readiness topics.

### **Technical Reviews**

The course will have an external technical review panel composed of the course instructor, a representative from the project sponsor and at least one other practicing engineer. Students must formally present their team's work to the technical review panel at three formal technical reviews – Systems Requirements Review (SRR), Preliminary Design Review (PDR) and Detailed Design Review (DDR). Entrance and exit criteria for each review will be given to each project team during the weekly lectures. Entrance criteria will include written documentation required for each review and information from each review will be assembled for the final course report.

### **Systems Engineering Status Reviews**

Along with their physical design and related documentation, students will be required to perform various systems engineering management tasks to support their design effort. Four times during the semester, each team will meet with the instructor to review their status on the systems engineering management of the project.

### **Feasible Idea**

After the Systems Requirements Review (SRR), each student must individually develop and present to the class one feasible design idea that will satisfy all requirements presented at the SRR. Each student will be allowed ten minutes and a maximum of 2 PowerPoint slides to clearly present and "sell" their idea to the class. A clear sketch of the idea must be included in the presentation.

### **Design Journals**

Each student will be required to keep a design journal throughout the design experience. The design journal must be a permanently bound notebook. The notebook will serve as an indication of each student's contribution to the project so students should keep dated entries of their notes, sketches, calculations, and other records of their thoughts related to the design experience.

### **Team Meetings**

Each project team must have a formal team meeting every other week. For this meeting

- One day in advance of the meeting, the designated meeting leader must prepare and distribute a printed meeting agenda and the leader's name should be noted on the agenda as the meeting leader.

- The meeting leader must prepare and distribute meeting minutes from the meeting no later than two days after the meeting.
- Meeting minutes should also be produced from any other formal meeting the group has (including review meetings with the sponsor)
- Group should have one notebook with all meeting agenda's and minutes.

### **Fundamentals of Engineering Exam Preparation and Exam**

MES students will be provided with access to the NC State FE Exam Review on-line course and are asked to prepare for, register and take the FE exam during spring semester.

## **Instructors**

**Bill Fortney** (wbfortne) - *Instructor*

**Email:** [wbfortne@ncsu.edu](mailto:wbfortne@ncsu.edu)

**Phone:** 252-514-5956

**Office Location:** Redd Room 108 - NCSU At Havelock

**Office Hours:**

## **Course Meetings**

### **Lecture**

**Days:** T/Th    **Time:** 12:00pm – 1:15pm    **Campus:** Havelock    **Location:** Redd Room 109

*This meeting is required.*

### **Course Materials**

#### **Textbooks**

*No Textbook is required.*

#### **Expenses**

None.

#### **Materials**

None.

## **Requisites and Restrictions**

### **Prerequisites**

**MES 401:** MAE 316, MES 300    **MES 402:** MES 401

### **Co-requisites**

**MES 401:** MAE 415, MAE 310

### **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**

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 required for this class.

### **Safety & Risk Assumptions**

Safety is everyone's responsibility and no one should work with a piece of equipment on which they are unfamiliar. Each student will be shown proper operation of each piece of equipment before they operate it. Proper personal protection equipment must be used at all times.

## Grading

### Grade Components Each Semester for MES 401 and MES 402

Component	Weight	Details
<b>Individual Grade</b>	<b>15%</b>	Individual grade will be based on lab journal, performance during System Engineering Status Reviews, performance during the Machining Training, and instructor evaluation.
<b>Team Grade</b> <b>Project Plan</b> <b>Systems Requirements Review</b> <b>Concept Review</b> <b>Preliminary Design Review</b> <b>Critical Design Review</b> <b>Final Presentation</b> <b>Final Report</b>	<b>85%</b>	Based on the initial project plan negotiated with the sponsor, students will complete a sub-set of the design tasks in MES 401 and the remaining tasks in MES 402. The team grade each semester is based on performance of the assigned steps for each semester. Each student's grade can be modified based on peer reviews conducted throughout the semester.

### Letter Grades

**This Course uses Standard NCSU Letter Grading:**

97	≤	<b>A+</b>	≤	100
93	≤	<b>A</b>	<	97
90	≤	<b>A-</b>	<	93
87	≤	<b>B+</b>	<	90
83	≤	<b>B</b>	<	87
80	≤	<b>B-</b>	<	83
77	≤	<b>C+</b>	<	80
73	≤	<b>C</b>	<	77
70	≤	<b>C-</b>	<	73
67	≤	<b>D+</b>	<	70
63	≤	<b>D</b>	<	67
60	≤	<b>D-</b>	<	63
0	≤	<b>F</b>	<	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](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](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](http://www.ncsu.edu/policies/academic_affairs/grades_undergrad/REG02.50.3.php).

## **Late Assignments**

All 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. A grade of zero will be given if students do not conduct one of the formal reviews on the specified date.

## **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 class 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 class 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 (919) 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

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## **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 Excused 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](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](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, (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://www.ncsu.edu/policies/academic\\_affairs/courses\\_undergrad/REG02.20.1.php](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](http://www.ncsu.edu/policies/campus_environ) or [http://www.ncsu.edu/equal\\_op](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 Syllabus

## MES 405 Mechanical Engineering Systems Lab II

**Section 605**

**Offered in Fall**

**2 Credit Hours**

### Course Description

In this course, students apply the measurement and experimental techniques learned in MES 305 to explore, experience and verify key theoretical concepts from the fields of thermal science, fluid mechanics, solid mechanics, and dynamics and controls. Students learn to successfully design, conduct, analyze, document and present a statistically sound engineering experiment. Students also experience engineering design by designing, building and testing a device to perform some type of experiment.

### Learning Outcomes

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

1. Properly use mechanical and electronic measuring devices to explore and verify theoretical concepts in fields of thermal science, fluid mechanics, solid mechanics, and dynamics and controls;
2. Use statistical techniques to analyze and interpret experimental data;
3. Calibrate various types of mechanical and electronic measurement devices;
4. Design and execute a statistically sound experiment to explore a given engineering phenomena;
5. Create a professional engineering lab journal;
6. Present experimental results and methods in various industry supported formats;
7. Prepare and deliver a professional oral presentation which presents technical results from an engineering experiment.
8. Utilize solid engineering design techniques to design and fabricate a test device.

## **Course Structure**

### COURSE COMPONENTS

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

#### **Pre-Laboratory Quiz 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 Design Project (Equivalent of 4 Laboratory Experiments)**

Students will be given a design challenge related to the need for a testing device. Students will follow the Systems Engineering process to design, build, test, and use a device which satisfies the testing need. Students will develop a project schedule which includes the completion of informal reviews for SRR, CR, PDR, and CDR. Then they will build, test, improve, and utilize their designs. The final deliverable will be a report documenting their design process and a demonstration of the product produced.

## Instructors

**Bill Fortney** – *Instructor* **Jim Yankauskas**

**Email:** [wbfortne@ncsu.edu](mailto:wbfortne@ncsu.edu) [jjyankau@ncsu.edu](mailto:jjyankau@ncsu.edu)

**Phone:** 252-514-5956

**Office Location:** Redd Room 106 - NCSU At Havelock

**Office Hours:** M & We 3:30-6:30pm

## Course Meetings

### Lab

**Days:** Tuesday / Thursday

**Time:** 12:00 – 3:00 PM

**Campus:** Havelock

**Location:** Redd Room 108 - NCSU At Havelock

## Course Materials

### Textbooks

**Note: MES 405 utilizes same textbooks as MES 305 and reference copies are provided for students**

**Introduction to Engineering** - *Wheeler, Anthony and Ganji Ahmad*

**Edition:** 2nd

**ISBN:** 10 0-13-174276-0

**Cost:** \$100 New \$50 Used

*This textbook is required.*

**Basic Experiments in PID Control For Engineers** - *Silverberg, Larry and Tran, Chau*

**Edition:** 1st

**ISBN:** 0-536-97571-X

**Cost:** \$30 New

*This textbook is required.*

### Expenses

None.

### Materials

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

## Requisites and Restrictions

### Prerequisites

MES 305, MAE 314, MAE 308

### Co-requisites

MAE 435 MAE 310

### Restrictions

Course is for MES majors only.

## 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
<b>Pre-Lab Quizzes &amp; Assignments</b>	<b>20%</b>	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 <b>will not be allowed to conduct the laboratory</b> experiment and <b>will receive a grade of zero</b> on the laboratory post-lab assignment.
<b>Lab Journal/Attendance</b>	<b>10%</b>	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.
<b>Post-Lab Assignments</b>	<b>70%</b>	After each laboratory experiment, students will complete a written assignment. These assignments will help 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	≤	<b>A+</b>	≤	100
93	≤	<b>A</b>	<	97
90	≤	<b>A-</b>	<	93
87	≤	<b>B+</b>	<	90
83	≤	<b>B</b>	<	87
80	≤	<b>B-</b>	<	83
77	≤	<b>C+</b>	<	80
73	≤	<b>C</b>	<	77
70	≤	<b>C-</b>	<	73
67	≤	<b>D+</b>	<	70
63	≤	<b>D</b>	<	67
60	≤	<b>D-</b>	<	63
0	≤	<b>F</b>	<	60

See Part "B" for information on policies such as credit only, late assignments, attendance, academic integrity..etc.

## Course Schedule

Week	Lab Topic	
1	Analysis Review / Design Challenge	Wind Tunnel #1 (Boundary Layer)
2	Analyzing Vibrations - Beam	Wind Tunnel #2 (Bluff Body)-A
3	Analyzing Vibrations - Cart -A	Wind Tunnel #2 (Bluff Body)-B
4	Analyzing Vibrations - Cart -B	Wind Tunnel #3 (Aerodynamics)
5	OP Amps / Filters	Viscosity Measurements #2
6	Bode Plots / Analysis	Pump Performance Map-A
7	Analog PID Control	Pump Performance Map-B
8	Digital PID Control	Composites
9	Pipe Friction & Orifice Plate-A	Thermal Conductivity
10	Pipe Friction & Orifice Plate-B	Heat Exchanger 1-A
11	Design Challenge	Design Challenge
12	Venturi & Minor Loss	Heat Exchanger 1-B
13	PID Tuning	Thermal Radiation 1
14	Design Challenge	Design Challenge
15	Presentations	Presentations

# **CNR 250 Course Syllabus**

## **CNR 250 – Diversity and Environmental Justice**

**Fall 2016**

**3 Credit Hours**

### **Special Notes**

This course will meet General Education Program requirements in the Interdisciplinary Perspectives and U.S. Diversity Categories.

### **Course Description**

Studying diversity in the United States provides opportunities to consider questions of difference in culture, identity and community, privilege and oppression, and power and responsibility in our nation, and to gain understanding of how these issues affect both individuals and communities. All of these questions have been and are deeply entwined with resource allocation decisions made by professionals. This course is designed to create a safe learning environment for reflection, engagement, risk-taking, and the development of personal awareness. We will offer direct and dynamic experiences for understanding and engaging around issues of difference, privilege and power. Some class meetings will combine a 1-hr lecture and a 2-hour problem session. During class sessions there will be group dialogue, personal reflection and individual and collective inquiry to explore these complex issues, their implications, and their possible applications. Students from the three departments in CNR will be mixed in teams to examine issues, questions, and case studies having multiple facets. 75% of the seats will be restricted for CNR students.

### **Learning Outcomes**

Students will be able to identify diverse stakeholders by strengthening capacity to engage across different example cases where environmental justice is a concern.

Students will be able to determine the extent to which environmental conditions have been affected by interconnections between natural resources, environmental management and issues related to power and privilege in our society.

Students will recognize instances where environmental justice is at risk during resource management decision processes.

Students will develop an increased awareness of the relationship between difference, privilege, tension and power in natural and social systems.

Students will be able to create a plan for decision making that fosters environmental justice.



## Course Structure

The course will meet once per week. There will be a lecture-discussion section will introduce case studies and concepts to be researched and analyzed during a problem session that follows every week. Conveners of the lecture-discussion sessions will change with the cases and topics being addressed.

## Instructors

**Professor Mickey L Fearn** (mlfearn) - *Instructor*

**Email:** [mickey\\_fearn@ncsu.edu](mailto:mickey_fearn@ncsu.edu)

**Phone:** 919-515-6206

**Office Location:** 2022B Biltmore Hall

**Office Hours:** Set by appointment

**Dr. Thomas RaShad Easley** (treasley) - *Instructor*

**Email:** [thomas\\_easley@ncsu.edu](mailto:thomas_easley@ncsu.edu)

**Web Page:** <http://cnr.ncsu.edu/cfd>

**Phone:** 919-513-0534

**Office Location:** 2022-C Biltmore

**Office Hours:** Set by appointment

**Mrs. Emilee Wooster**- *Teaching Assistant*

**Email:** [eebriggs@ncsu.edu](mailto:eebriggs@ncsu.edu)

**Please email Mrs. Briggs to set up appointments.**

## Course Meetings

### Lecture

**Days:** F

**Time:** 8:30am - 11:15am

**Campus:** Main

**Location:** 3214 Jordan Hall (Addition)

*This meeting is required.*

## Course Materials

### Textbooks

Wheatley, Margaret. (2011). *Walk Out Walk On: A Learning Journey into Communities Daring to Live the Future Now*. Berrett-Koehler Publishers, Inc.

## Requisites and Restrictions

### Prerequisites

None.

### Co-requisites

None.

### Restrictions

75% of the seats will be restricted for CNR students because this course is designed to cross all of our departments. Some of the lectures will be led by professors in either the Forestry and Environmental Resources Department, Forest Biomaterials Department or Parks, Recreation, & Tourism Department.

## **General Education Program (GEP) Information**

### **GEP Category**

Interdisciplinary Perspectives

### **GEP Category Outcomes**

Students will recognize demographic and cultural indicators to consider when environmental justice is at risk during resource management decision processes.

Students will be able to identify cultural and demographic factors that indicate or lead to environmental injustice.

### **How This Course Will Fulfill GEP Category Outcomes**

Through examination of a variety of case studies from history while exploring individuals' privilege, power, and identity.

By analyzing contexts of controversies and cases involving alleged, perceived, or documented environmental justice.

By developing a pragmatic protocol to apply when faced with proposals to change environmental conditions.

### **Which disciplines will be synthesized, connected, and/or considered in this course?**

Natural resources management and conservation

Cultural geography

### **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"?**

A variety of College of Natural Resources faculty and natural resource professionals will team teach this course, coming from natural resources, non-profits that work on environmental justice issues, and social science disciplines. Each lecture will be presented with supporting readings, study questions and research activities that propel students into a discovery process to extract further information to enhance their understanding of the diversity and environmental Justice.

### **GEP Co-requisites**

U.S. Diversity

### **GEP Co-requisite Outcomes**

Students will learn how race was socially constructed and explore how race impacts how value systems have been designed.

Students will be able to determine the extent to which environmental conditions have been affected by interconnections between natural resources, environmental management and issues related to power and privilege in our society.

### How This Course Will Fulfill GEP Co-requisite Outcomes

Students will map the relationships among stakeholders and relative positions in space and time relative to each case.

### Transportation

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

### Safety & Risk Assumptions

None.

### Grading

#### Grade Components

Component	Weight	Details
<b>Draft and Final Autobiographical Essay</b>	<b>20%</b>	This assignment has three sections: Purposes, Questions for Reflection, and Writing Directions.
<b>Reflective Writings</b>	<b>20%</b>	Weekly prompts will elicit students' reflections on the experience with the assignments under consideration.
<b>Next Steps Plan</b>	<b>15%</b>	Each student will develop a position paper concerning one of the case study topics examined during the course. A rubric for evaluation will emphasize attention to questions of diversity and the dimensions of the justice concerns demonstrated by the student's investigation.
<b>Attendance and Participation</b>	<b>25%</b>	Each session will involve active engagement with the topics and materials of concern. Students will work in teams and construct responses to prompts and questions generated by the session facilitator. Points will be awarded for being present and contributing to the team and collective effort.
<b>Textbook Reflections</b>	<b>20%</b>	A group will present on a chapter from the course textbook

### Letter Grades

**This Course uses Standard NCSU Letter Grading:**

97 ≤ **A+** ≤ 100

93 ≤ **A** < 97

90 ≤ **A-** < 93

87 ≤	<b>B+</b>	< 90
83 ≤	<b>B</b>	< 87
80 ≤	<b>B-</b>	< 83
77 ≤	<b>C+</b>	< 80
73 ≤	<b>C</b>	< 77
70 ≤	<b>C-</b>	< 73
67 ≤	<b>D+</b>	< 70
63 ≤	<b>D</b>	< 67
60 ≤	<b>D-</b>	< 63
0 ≤	<b>F</b>	< 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>.

### **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>.

Conditions for an Incomplete and completion of requires to earn a grade are negotiated on a case by case basis.

### **Late Assignments**

Late assignments will receive only 0.75 of their otherwise assigned value.

### **Attendance Policy**

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

### **Attendance Policy**

This course relies heavily on full participation by everyone, presenting diverse perspectives and knowledge of the issues being considered. Attendance at all meetings is required.

### **Absences Policy**

Prior notification must be given if a request for an excused absence is expected. Documentation of unexpected official or illness-related absences must be submitted and will be reviewed case by case.

### **Makeup Work Policy**

Work missed due to absence may be completed and submitted if done within two weeks of the absence.

### **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>

#### **Academic Honesty**

See <http://policies.ncsu.edu/policy/pol-11-35-01> 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.

#### **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/](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 Institutional Equity and Diversity (OIED) at 919-515-3148.

**Course Schedule NOTE: The course schedule is subject to change.**

<b>Week</b>	<b>Topic</b>	<b>Assignment</b>	<b>What's Due</b>
1-1/8	Introductions, Terms/Definitions Ground Rules	Definitions Read Giller article Read Hanley article	
2-1/15	Race: The Power of Illusion (Part I) Defining Terms	Read, Ukpokodu article	<b>Definitions</b>
3-1/22	Race: Power of Illusion (Part II)	Read Readings	<b>Turn in Reflection on Hanley</b>
4-1/29	Race: The Power of Illusion (Part III)	Start Reading Walk Out Walk On Read Toxic Wastes and Race	
5-2/5	PCBs and the Warren Co. Landfill Guest Lecture: Sarah Warren		
6-2/12	Conservation Trust Guest Lecture: Melanie Allen	Read Floyd Article Read Gender bias article	<b>Draft Autobiographical Essay</b>
7-2/19	Guest Lecture Med Byrd		<b>Letter from the Birmingham Jail</b>
8-2/26	Guest Lecture Gary Blank Discuss the Letter from the Birmingham Jail		
9-3/4	EXCURSION OUTSIDE OF CLASS		
3/11	SPRING BREAK		
10-3/18	Working on the White-Tail Deer Scenario Students will be split into different stakeholder groups and present their cases about this issue.		
11-3/25			<b>Next Steps Plan</b>
12- 4/1	Presentations on Wheatley Book		
13-4/8	EXCURSION Center for Human and Earth Restoration		<b>Final Autobiographical Essay</b>
14/15	<b>Lecture on GIS and Environmental Justice</b> Conservation Fund Guest Lecture- Mikki Sager/Marilynn Robinson		
15-4/22	<b>Wheatley Presentations (All Groups)</b>	Wrap-Up/ Course Evaluations	





## FOR 430 Course Syllabus

### FOR 430 - Forest Health and Protection

**Section 001**

**SPRING 2017**

**3 Credit Hours**

#### Course Description

This course will introduce students to the major insect and disease problems of North American forests, both native and introduced, with an emphasis on the recognition and management of pests and the damage they cause. Wild land fire, invasive plants, and climate change and their interactions with forest insect and diseases will also be covered.

#### Learning Outcomes

1. Explain the concept of forest health as related to natural, planted, and urban forests.
2. Identify and develop management plans for forest insects and diseases.
3. Explain the impacts and management of major invasive plants.
4. Explain the basic concept of climate change and its impacts on forest health.
5. Explain the history of human influences on forest structure and health

#### Course Structure

This course will have two weekly lecture sections and one lab section. Five lab meetings will consist of field trips outside of the classroom, four on campus and one off campus.

#### Instructors

**Robert Jetton** (rmjetton) - *Instructor*

**Email:** [rmjetton@ncsu.edu](mailto:rmjetton@ncsu.edu)

**Phone:** 919-515-6425

**Fax:** 919-515-6430

**Office Location:** 3227 Jordan Hall Addition

**Office Hours:** By appointment

#### Course Meetings

##### Lecture

**Days:** MW

**Time:** 9:35 AM - 10:25 AM

**Campus:** Main

**Location:** TBD

*This meeting is required.*

##### Lab

**Days:** F

**Time:** 3:00 PM - 5:00 PM

**Campus:** Main

**Location:** TBD

*This meeting is required.*

## Course Materials

### Textbooks

**Forest Health and Protection** - Robert L. Edmonds, James K. Agee, and Robert I. Gara

**Edition:** Second

**ISBN:** 978-1-57766-652-3

**Cost:** \$100

*This textbook is required.*

**Insects and Diseases of Trees in the South** - USDA Forest Service

**Edition:** First

**Cost:** \$0

*This textbook is required.*

**Forest Entomology: Ecology and Management** - Robert N. Coulson and John A. Witter

**Edition:** First

**ISBN:** ISBN 0-471-02573-9

**Cost:** Available in Library

*This textbook is optional.*

**Forest Insects: Principles and Practice of Population Management** - Alan A. Berryman

**Edition:** First

**ISBN:** 0-306-42196-8

**Cost:** Available in Library

*This textbook is optional.*

**Tree Disease Concepts** - Paul D. Manion

**Edition:** Second

**ISBN:** 0-13-929423-6

**Cost:** Available in Library

*This textbook is optional.*

### Expenses

None.

### Materials

None.

## Requisites and Restrictions

### Prerequisites

Biology or Plant Biology Course

### 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**

Transportation will be provided by: NC State University Department of Forestry & Environmental Resources and/or NC State University Motor Pool. 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
Grading Policy	Points	Quizzes (4) 100 pts (25 pts/quiz)
		Midterm Exams (2) pts (100 pts/midterm) <span style="float: right;">200</span>
		Final Exam 200 pts
		Lab Reports (2) 100 pts (50 pts/report)
		Fact Sheet/Presentation <span style="float: right;">100</span> pts (50 pts for fact sheet/50 pts for presentation)
		<u>Collection</u> <u>100 pts</u>
		<b>Total Points Possible</b> <b>800 pts</b>
		<b><u>Grade Assignment</u></b>
		A = ≥ 90% of 800 pts
		B = ≥ 80% of 800 pts
C = ≥ 70% of 800 pts		
D = ≥ 60% of 800 pts		

	F = < 60% of 800 pts
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**Letter Grades****This Course uses Standard NCSU Letter Grading Scale**

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>.

**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>.

**Policies on Incomplete Grades and Late Assignments**

Work missed due to excused absences will be made up by arrangement with the instructor. Late assignments will be accepted only with permission of the instructor. It is the student's responsibility to contact the instructor prior to the due date or as soon as possible after an emergency situation has caused the student to miss an assignment.

**Late Assignments****Policies on Incomplete Grades and Late Assignments**

Work missed due to excused absences will be made up by arrangement with the instructor. Late assignments will be accepted only with permission of the instructor. It is the student's

responsibility to contact the instructor prior to the due date or as soon as possible after an emergency situation has caused the student to miss an assignment.

### **Attendance Policy**

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

### **Attendance Policy**

#### **Attendance Policy**

Students are expected to attend all class sessions. If a class is missed students are responsible to recover the information missed. Refer to: <http://policies.ncsu.edu/regulation/reg-02-20-03>

### **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>

#### **Academic Honesty**

See <http://policies.ncsu.edu/policy/pol-11-35-01> 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**

There are no electronically-hosted components for this 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**

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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/](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 MW 9:35 AM - 10:25 AM — Course Introduction — 01/09/2017 - 01/11/2017**

1. Course introduction & syllabus review; Forest health concepts; Discussion: what is a healthy forest?
  2. Introduction to the World of Insects; big picture, biodiversity, structure/function, evolution, adaptation, life strategies, ecosystem services, basic ecology
- 

### **Lab F 3:00 PM - 5:00 PM — Course Introduction — 01/13/2017 - 01/13/2017**

Lab 1 - Review instructions for Fact Sheets & Presentations and Signs & Symptoms Collections; Arthropod morphology

### **Lecture MW 9:35 AM - 10:25 AM — Introduction to Forest Entomology — 01/18/2017 - 01/18/2017**

Introduction to forest entomology; forest insect feeding groups; insect orders of importance in forestry

### **Lab F 3:00 PM - 5:00 PM — Introduction to Forest Entomology — 01/20/2017 - 01/20/2017**

Lab 2 - Insect taxonomy, structure, function, orders of importance in forestry

### **Lecture MW 9:35 AM - 10:25 AM — Introduction to Forest Pathology and IPM — 01/23/2017 - 01/25/2017**

1. Introduction to forest pathology; classification, causes of disease, disease cycle, disease triangle, Koch's postulates
  2. Integrated Pest Management (IPM); strategies for the management of forest insects and diseases
- 

### **Lab F 3:00 PM - 5:00 PM — Introduction to Forest Pathology and IPM — 01/27/2017 - 01/27/2017**

Lab 3 - **Quiz 1**; Set up pathogen screening experiment

### **Lecture MW 9:35 AM - 10:25 AM — Bark Beetles — 01/30/2017 - 02/01/2017**

1. Bark Beetles/Phloem Feeders I: Introduction and the southern pine bark beetle guild

2. Bark Beetles/Phloem Feeders II: Ambrosia beetles and other examples

**Lab F 3:00 PM - 5:00 PM — Bark Beetles — 02/03/2017 - 02/03/2017**

Lab 4 - Identification and classification of insect/pathogen damage specimens

**Lecture MW 9:35 AM - 10:25 AM — Defoliating Insects — 02/06/2017 - 02/08/2017**

1. Defoliating Insects I: introduction and hardwood defoliators

2. Defoliating Insects II: conifer defoliators

**Lab F 3:00 PM - 5:00 PM — Defoliating Insects — 02/10/2017 - 02/10/2017**

Lab 5 - Quiz 2; Identification and classification of insect/pathogen damage specimens

**Lecture MW 9:35 AM - 10:25 AM — Wood Boring Insects — 02/13/2017 - 02/15/2017**

1. Wood Boring Insects I: introduction and hardwood borers

2. Wood Boring Insects II: conifer borers

**Lab F 3:00 PM - 5:00 PM — Wood Boring Insects — 02/17/2017 - 02/17/2017**

Lab 6 - Midterm Exam 1

**Lecture MW 9:35 AM - 10:25 AM — Sap Feeding, Tip, Shoot, and Regeneration Insects — 02/20/2017 - 02/22/2017**

1. Sap Feeding and Gall Making Insects

2. Tip, Shoot, and Regeneration Insects

**Lab F 3:00 PM - 5:00 PM — Sap Feeding, Tip, Shoot, and Regeneration Insects — 02/24/2017 - 02/24/2017**

Lab 7 - Student Fact Sheet Presentations

**Lecture MW 9:35 AM - 10:25 AM — Seed and Cone Insects — 02/27/2017 - 03/01/2017**

1. Student Fact Sheet Presentations

2. Seed and Cone Insects

**Lab F 3:00 PM - 5:00 PM — Seed and Cone Insects — 03/03/2017 - 03/03/2017**

Lab 8 - Collect pathogen screening experiment data (Lab 4)

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**Lecture MW 9:35 AM - 10:25 AM — Foliage Diseases and Rusts — 03/13/2017 - 03/15/2017**

1. Foliage Diseases and Rusts I

2. Foliage Diseases and Rusts II

**Lab F 3:00 PM - 5:00 PM — Foliage Diseases and Rusts — 03/17/2017 - 03/17/2017**

Lab 9 - Quiz 3; Signs and Symptoms Campus Tour

**Lecture MW 9:35 AM - 10:25 AM — Stem and Branch Diseases — 03/20/2017 - 03/22/2017**

1. Stem and Branch Diseases I

2. Stem and Branch Diseases II

**Lab F 3:00 PM - 5:00 PM — Stem and Branch Diseases — 03/24/2017 - 03/24/2017**

Lab 10 - Forest insect sampling experiment (trap set up)

**Lecture MW 9:35 AM - 10:25 AM — Mycorrhizae and Root Diseases — 03/27/2017 - 03/29/2017**

1. Mycorrhizae

2. Root Diseases

**Lab F 3:00 PM - 5:00 PM — Mycorrhizae and Root Diseases — 03/31/2017 - 03/31/2017**

Lab 11 - Midterm Exam 2

**Lecture MW 9:35 AM - 10:25 AM — Regeneration and Nursery Diseases; Forest Declines — 04/03/2017 - 04/05/2017**

1. Regeneration & Nursery Diseases

2. Forest Declines

**Lab F 3:00 PM - 5:00 PM — Regeneration and Nursery Diseases; Forest Declines — 04/07/2017 - 04/07/2017**

Lab 12 - Sort and identify forest insect sampling experiment specimens (Lab 10)

**Lecture MW 9:35 AM - 10:25 AM — Insect-Disease Complexes; Invasive Plants — 04/10/2017 - 04/12/2017**

1. Newly emerging insect-disease complexes



2. Introduction to Invasive Plants and Their Management 1

**Lecture MW 9:35 AM - 10:25 AM — Invasive Plants; Climate Change and Forest Health — 04/17/2017 - 04/19/2017**

1. Introduction to Invasive Plants and Their Management 2

2. Climate Change and Forest Health

**Lab F 3:00 PM - 5:00 PM — Invasive Plants; Climate Change and Forest Health — 04/21/2017 - 04/21/2017**

Lab 13 - Quiz 4; S&S Collections Help

**Lecture MW 9:35 AM - 10:25 AM — Forest Health Monitoring; Forest History Effects on Forest Health — 04/24/2017 - 04/26/2017**

1. Forest Health Monitoring and Risk Assessment

2. Forest History and Change in North America: human influences on forest structure and health

**Lab F 3:00 PM - 5:00 PM — Forest Health Monitoring; Forest History Effects on Forest Health — 04/28/2017 - 04/28/2017**

Lab 14 - Field Trip to NC Forest Service

## **BSC 478 – Research Fundamentals in Biological Sciences**

### **Section 001 – Topic: Behavioral Neuroendocrinology**

**3 Credit Hours, Spring 2017**

**NCSU Department of Biological Sciences**

***Class will meet once a week (add time and place). In addition, 84 hours of lab research time and attendance at two seminars are required.***

### **Course Description**

Students will use this course to supplement and strengthen their undergraduate research experience in behavioral neuroendocrinology, interacting with faculty and students outside of their host labs. Activities will include hands-on research in addition to guided in-class group discussions of the primary literature and emerging technologies in the field. Students will present their data at either an NC State event or a national or international meeting related to behavioral neuroendocrinology. Students will also be required to attend and briefly summarize two seminars or journal clubs hosted anywhere on campus -- the topics must be related in some way to this class.

### **Learning Outcomes**

After completing this course, students will be able to:

- integrate concepts, theories, and methods across multiple disciplinary areas relevant to their research (e.g., developmental biology, neuroendocrinology, genetics, cell biology, animal behavior, and toxicology), and apply the knowledge and skills acquired through previous coursework in these areas to the specific issues and laboratory questions addressed in this course.
- identify topics of interest within the scope of the course to explore and discuss with fellow classmates
- evaluate how scientific knowledge is applied in addressing emerging concepts in behavioral neuroendocrinology
- demonstrate an ability to engage productively in collaborative projects, both in the classroom and in the lab
- communicate the results of their work in an effective and professional manner

### **Course Structure**

This course will include critical reading of primary research articles, discussion of review articles, integration of epidemiological and biomedical research, formulation of new hypotheses and research directions, and collaborative learning. Students will develop presentations, perform mentored bench work in behavioral neuroendocrinology, lead discussions, use numerous search tools to find relevant information, and will have the opportunity to obtain guidance for applying to graduate programs. Techniques to be covered and demonstrated in the course include preparation and slicing of neural tissue, electrophysiology, autoradiography, PCR, immunohistochemistry, and basic histology.

The course will begin with a formal overview of the basic concepts within the topic, designed to serve as a "launching pad" from which the course will evolve through the collaborative efforts of the students under the guidance of the instructors. Because the course is primarily discussion-based, students are expected to attend all classes, read all of the material in advance (available online), and come prepared to discuss the material. Readings will come from a variety of sources and will include both review articles and primary literature, including "hot" late-breaking publications. Readings will be selected by each student, in collaboration with an instructor.

Attendance at two seminars and/or journal clubs is also required. Students may pick any two so long as they are related to the class. Students will be expected to document their attendance and briefly summarize the presentation for the rest of the class. Participation in the neuroscience journal club or attendance of seminars sponsored by the Keck Center for Behavioral Biology, Genetics Program, Toxicology Program, Zoology Program, Department of Chemistry, or similar are suggested to fulfill this requirement.

### **BSC 478 001 Instructors (all office hours are by appointment)**

**Dr. Heather Patisaul**

hbpatisa@ncsu.edu

David Clark Labs (DCL) 156

513-7567

**Dr. John Godwin**

godwin@ncsu.edu

DCL 156

513-2936

**Dr. Lisa McGraw**

lamcgraw@ncsu.edu

DCL 168

513-4326

**Dr. John Meitzen**

[jemeitze@ncsu.edu](mailto:jemeitze@ncsu.edu)

DCL 144

515-4496

### **Course Meetings**

The course will meet [ADD TIME AND PLACE]. **Attendance and participation in class are required and considered essential to achieving the learning outcomes.**

Additionally, each student will perform a **minimum of 84 hours of mentored lab work**. Hours must be documented with the host lab. Students may choose to complete more than this minimum, by arrangement with the supporting mentor. Participation in lab work is required and considered essential to achieving the learning outcomes. Failure to complete the minimum number of lab hours will result in a failing grade for the course.

**Attendance at two seminars and/or journal club meetings, given anywhere on campus, is required.** Students will be expected to document this attendance and to briefly summarize the presentation for their classmates. Seminar topics must be related to class in some way.

### **Textbooks**

There is no assigned textbook. Instead, assigned materials will be drawn from a variety of sources including scientific journals, books, videos and web pages. Students are expected to complete all assignments (including readings) PRIOR to class. Because this class is discussion based, it will be obvious if a student is unprepared.

### Prerequisites

None. Appropriate course preparation will be discussed as part of arranging a project with a lab.

### Restrictions

Students must arrange a project with the host lab prior to enrollment in the course.

### General Education Program (GEP) Information

This course does not fulfill a General Education Program requirement.

### Grading

Component	Value	Comments
Attendance and Class Participation	20%	Expectations will be discussed in the first week of class. Regular attendance and participation (see participation guidelines* below) are required. Attendance includes both the classroom and lab components as well as attendance at 2 seminars/journal club meetings on campus.
Leading Discussion	20%	With the guidance of one of the instructors, students will select research articles on a relevant topic for the class to read and discuss. The schedule and topics will be developed within the first few weeks of class.
Data Presentation	30%	A comprehensive presentation of your lab research, presented at either an NC State event or a national or international meeting. The quality of the data generated and the quality of the presentation itself will factor into the grade. Additional information will be provided in a separate handout within the first two weeks of the semester.
Lab Notebook	10%	You may be asked at any time to show your lab notebook to an instructor. In addition to all that is typically expected to be recorded in a lab notebook, you should also use yours to document your hours in the lab. By the end of the semester, all lab notebooks will be reviewed for clarity and completeness.
Bench work	20%	Performance of mentored, independent research is fundamental to this course. Attendance, teamwork (i.e., collaboration), progress, and quality of work will factor into this grade. Failure to complete the minimum 84 hours (documented in your lab notebook) can result in a failing grade.
<b>TOTAL</b>	<b>100%</b>	

#### \*Class Participation Guidelines:

1. Participating is not the same as talking a lot. Participation involves offering thoughtful opinions or questions that add to the conversation in a respectful manner.
2. Be prepared to critique (constructively) and be critiqued. Having opinions requires having support for your opinions, otherwise they are just words.
3. Be open-minded about your opinions. You may come to class with your own ideas but be prepared to discuss other perspectives with fairness and with respect.
4. You can't participate substantively if you have not done the reading or the assignments. Do not come to class unprepared.
5. Some weeks, you may be required to come to class prepared to explain your research project and progress to-date.

6. If you have made an effort to understand a subject matter but still do not understand the concepts, never hesitate to ask clarifying questions – you may not be the only one who is confused.
7. For select reading assignments you will be required to come to class with 2-3 thoughtful and well-written questions relevant to the topic area. Students will be called on to ask their questions to stimulate discussion. Your questions will be turned in to the instructor in order to gauge understanding and the degree of thought invested.
8. The instructor will provide mid-semester feedback on participation performance. At any point during the semester, you have the option of requesting a meeting to discuss your performance.

**This Course uses Standard NCSU Letter Grading:**

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

### **Requirements for Credit-Only (S/U) Grading and for Auditors (AU)**

This course cannot be taken for credit only. This course cannot be audited.

### **Policies on Incomplete Grades**

A grade of Incomplete (IN) may be assigned at the discretion of your instructor. This will be considered only under exceptional circumstances that seriously interrupt your work and that are not caused by your own negligence. An IN grade is appropriate only if your record in this course is such that the successful completion of missed assignments or time in the lab would enable you to pass the course. If an IN is granted, it is the student's responsibility to understand and comply with the terms under which the instructor will change the grade upon completion of required work.

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](http://www.ncsu.edu/policies/academic_affairs/grades_undergrad/REG02.50.3.php).

### **Late Assignments**

Assignments will NOT be accepted after they are due, unless you provide documentation of a university-sanctioned excuse within two days of missing the assignment. See the "Makeup Work" section for details. Information on university-sanctioned excuses can be found here:

[http://www.ncsu.edu/policies/academic\\_affairs/courses\\_undergrad/REG02.20.3.php](http://www.ncsu.edu/policies/academic_affairs/courses_undergrad/REG02.20.3.php)

## Attendance Policy

### Attendance, Absences, and Late Arrivals

**Attendance in lab and at all class sessions is mandatory.** This class can only work when everyone attends and participates. Only one unexcused absence will be accepted without penalty. After that, each absence will result in a drop of one letter grade unless a documented excuse is provided (preferably in advance). Please be on time – **being more than 5 minutes late to class can be counted as an absence.** It is impossible to do well in a discussion-based course such as this one if you are frequently late, absent, or unprepared. Failure to be adequately prepared will negatively impact your participation score. Lab hours must be documented.

The university attendance regulation, including the university definition of excused absences, can be found here: [http://www.ncsu.edu/policies/academic\\_affairs/courses\\_undergrad/REG02.20.3.php](http://www.ncsu.edu/policies/academic_affairs/courses_undergrad/REG02.20.3.php)

### Makeup Work

Allowed only if you provide documentation of a university sanctioned excuse. No exceptions. Makeup work is at the discretion of the instructor.

## 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](http://www.ncsu.edu/policies/student_services/student_discipline/POL11.35.1.php)

It is the instructor's understanding and expectation that the submission of any assignment, including exams, means that the student neither gave nor receive unauthorized aid on that exam or assignment. Giving or receiving unauthorized aid may result in an F for this course as well as more severe disciplinary penalties.

See [http://www.ncsu.edu/policies/student\\_services/student\\_discipline/POL11.35.1.php](http://www.ncsu.edu/policies/student_services/student_discipline/POL11.35.1.php) for a detailed explanation of academic honesty.

## Electronically-Hosted Course Components

It is highly unlikely but 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>) located at 1900 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 at [http://www.ncsu.edu/policies/academic\\_affairs/courses\\_undergrad/REG02.20.1.php](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](http://www.ncsu.edu/policies/campus_environ) or [http://www.ncsu.edu/equal\\_op](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

Students and instructors will work together to complete this schedule -- with topics, readings, weekly assignments (if any – these might include bringing written questions about the reading, bringing lab notebooks, preparing to talk about research progress, etc), and persons responsible for leading each discussion. Lab work is to be scheduled with the host lab.

Date	Discussion Topic	Readings and Assignments Due
Jan 8	Introduction/ Course Overview	
15	Scientific ethics case study – Sex and Neuroscience	
22		
29		
30		
Feb 5		
12		
19		
26		
Mar 4		
11	<i>no class – SPRING BREAK</i>	
18		
25	<i>no class – SPRING HOLIDAY</i>	
April 1		
8		
15		
22	POSTER PRESENTATIONS; 12-4 DSL Atrium	

## BSC 492 – Professional Experience (1-3 cr)

### Description

BSC 492 provides an opportunity for students to gain real-world experience *relevant to their academic or career interests*. A minimum of 42 hours must be completed for each credit hour earned (3 credits maximum for a given experience). The experience must be arranged by the student and approved by the Department of Biological Sciences in advance. To gain approval, students must submit the completed BSC 492 Contract, signed by their 492 supervisor and by their academic advisor. In addition to the work described in the contract, students will complete a series of reflective written assignments during and at the end of their 492 experience.

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### Learning Outcomes

After completing BSC 492, students will be able to:

- describe the nature of their experience and their specific role(s) in that experience
  - describe the professional competencies they developed or deepened through their 492 experience
  - describe the knowledge and/or skills they gained or deepened through this 492 experience
  - explain how they applied their academic (in-class) experiences to their 492 experience
  - describe how their 492 experience changed or strengthened their academic or career goals
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### Course Schedule

There are no set meeting times for BSC 492 – the work schedule is by agreement between you and your supervisor. Time commitment is expected to be a minimum of 42 hours engaged in the learning experience (including all work expectations specified by the supervisor) for every 1 credit hour earned, plus time spent on several short written assignments to be submitted through Moodle. Due dates for these assignments are provided on the course Moodle site.

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### Prerequisites and Restrictions

Restricted to students who have completed the required course contract (attached) and received the approval of their proposed BSC 492 supervisor, their academic advisor, and the Department of Biological Sciences. Students must submit the completed contract before they will be enrolled in the course and added to the course Moodle site. Students can repeat BSC 492 for different or more advanced experiences, but there may be a limit on the number of credit hours that they can use toward graduation in their curriculum. Students must ensure that all aspects of the experience conform to the Code of Student Conduct.

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### Honor Pledge

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

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### Requirements for Auditors (AU)

BSC 492 cannot be audited.



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## **Moodle Website and Electronically-Hosted Course Components**

You will submit required materials via the course Moodle website during and at the end of your learning experience. You should be able to access the course website at [http:// wolfware.ncsu.edu](http://wolfware.ncsu.edu).

You will not be required to disclose personally identifiable information to other students in the course.

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## **Grading**

The basis of the S or U grade will be the contract agreed to by the student, their experience supervisor, and the student's academic advisor. Students must complete the minimum number of hours of expected work and any other requirements as specified in the BSC 492 contract, as well as all written assignments on Moodle. It is possible that the supervisor will require an additional written assignment or presentation of some form, and there should be a clear explanation on the BSC 492 contract with regard to those expectations.

The written assignments on Moodle will include four sets of questions with due dates spread throughout the experience. The first set of questions (10%), due early in the experience, involve describing the nature of the learning experience and the student's expectations for that experience. The second set of questions (30%) involve a reflection on knowledge and skills (including professional competencies) gained or deepened during the experience. The third set of questions (30%) involve a reflection on the relationship between the student's academic (in-class) studies and the learning experience. The final set of questions (30%), due after the experience has been completed, will involve a broader reflection on what the student learned from the experience and how they have grown as a result of the experience.

To earn an 'S' for BSC 492, students must answer all Moodle questions and must earn at least 70% on the Moodle questions (combined). If the supervisor requires an additional assignment (e.g., proposal, paper, poster, presentation) and wants that assignment to contribute to the grade calculation, the student must answer all Moodle questions and must earn at least 70% on the Moodle questions (combined) and at least 70% on the additional assignment to earn an 'S' for BSC 492.

Student participation and completion of the required work will be verified by having the supervisor complete a brief evaluation.

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## **Policies on Incomplete Grades and Late Assignments**

Incompletes are allowed only at the discretion of the supervisor and advisor. Detailed arrangements for completion of the required work must be made prior to the end of finals for the semester in which the student is enrolled. It is the student's responsibility to make sure that these arrangements are made with the supervisor and communicated to the academic advisor.

If an extended deadline is not authorized by the supervisor or department, an unfinished incomplete grade will automatically change to a U 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 U 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 <https://policies.ncsu.edu/regulation/reg-02-50-03>

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## **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 (<https://dso.dasa.ncsu.edu/>) 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 <https://policies.ncsu.edu/regulation/reg-02-20-01>

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## **Policy on 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 <https://policies.ncsu.edu/regulation/reg-04-25-02>. 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.

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## **Academic Integrity**

Students are required to comply with the university policy on academic integrity found in the Code of Student Conduct found at <https://policies.ncsu.edu/policy/pol-11-35-01>. Students must ensure that all aspects of the experience conform to the Code of Student Conduct.

We take seriously our responsibility to provide a fair environment for all students, so all suspected violations of this policy will be reported to the Office of Student Conduct.

It is the department's understanding and expectation that the submission of any assignment means that the student neither gave nor received unauthorized aid on that assignment. Giving or receiving unauthorized aid will result in a 'U' for this course as well as more severe disciplinary penalties.

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## **BSC 493 – Research Experience (0-3 cr)**

### **Description**

BSC 493 provides an opportunity for students to gain real-world experience in a scientific research program. A minimum of 42 hours must be completed for each credit hour earned (3 credits maximum in a given semester for one experience). The experience must be arranged by the student and approved by the Department of Biological Sciences in advance. To gain approval, students must submit the completed BSC 493 Contract, signed by their 493 research mentor and by their academic advisor. Research mentors are encouraged to require a research paper or poster presentation as part of the work expectations when appropriate. In addition to the work described in the contract, students will complete a series of reflective written assignments during and at the end of their 493 experience.

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### **Learning Outcomes**

After completing BSC 493, students will be able to:

- describe the goal of their research project and their specific role(s) in that project
  - describe the professional competencies they developed or deepened through their research experience
  - explain how they applied their academic (in-class) experiences to their research experience
  - describe the knowledge and skills they gained or further developed through their research experience
  - describe how their research experience changed or strengthened their academic or career goals
  - explain how their understanding of the nature and practice of science was impacted by their research experience
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### **Course Schedule**

There are no set meeting times for BSC 493 – the work schedule is by agreement between you and your research mentor. Time commitment is expected to be a minimum of 42 hours engaged in the learning experience (including all work expectations specified by the mentor) for every 1 credit hour earned, plus time spent on several short written assignments to be submitted through Moodle. Due dates for these assignments are provided on the course Moodle site. Students can opt for a 0 (zero) credit hour option in order to have their research experience noted on their transcript without adding to their credit hour load (minimum 30 hours engaged in the learning experience).

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### **Prerequisites and Restrictions**

Restricted to students who have completed the required course contract (attached) and received the approval of their proposed BSC 493 mentor, their academic advisor, and the Department of Biological Sciences. Students must submit the completed contract before they will be enrolled in the course and added to the course Moodle site. Students can repeat BSC 493 for different or more advanced experiences, but there may be a limit on the number of credit hours that they can use toward graduation in their curriculum. Students must ensure that all aspects of the experience conform to the Code of Student Conduct.

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## **Honor Pledge**

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

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## **Requirements for Auditors (AU)**

BSC 493 cannot be audited.

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## **Moodle Website and Electronically-Hosted Course Components**

You will submit required materials via the course Moodle website during and at the end of your learning experience. You should be able to access the course website at [http:// wolfware.ncsu.edu](http://wolfware.ncsu.edu).

You will not be required to disclose personally identifiable information to other students in the course.

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## **Grading**

The basis of the S or U grade will be the contract agreed to by the student, their research mentor, and the student's academic advisor. Students must complete the minimum number of hours of expected work and requirements as specified in the BSC 493 contract, as well as all written assignments on Moodle. It is likely that the research mentor will require an additional written assignment or presentation of some form, and there should be a clear explanation on the BSC 493 contract with regard to those expectations.

The written assignments on Moodle will include four sets of questions with due dates spread throughout the experience. The first set of questions (10%), due early in the experience, involve describing the nature of the learning experience and the student's expectations for that experience. The second set of questions (30%) involve a reflection on knowledge and skills (including professional competencies) gained or deepened during the experience. The third set of questions (30%) involve a reflection on the relationship between the student's academic (in-class) studies and the learning experience. The final set of questions (30%), due after the experience has been completed, will involve a broader reflection on what the student learned from the experience and how they have grown as a result of the experience.

To earn an 'S' for BSC 493, students must answer all Moodle questions and must earn at least 70% on the Moodle questions (combined). If the mentor requires an additional assignment (e.g., proposal, paper, poster, presentation) and wants that assignment to contribute to the grade calculation, the student must answer all Moodle questions and must earn at least 70% on the Moodle questions (combined) and at least 70% on the additional assignment to earn an 'S' for BSC 493.

Student participation and completion of the required work will be verified by having the research mentor complete a brief evaluation.

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## **Policies on Incomplete Grades and Late Assignments**

Incompletes are allowed only at the discretion of the mentor and advisor. Detailed arrangements for completion of the required work must be made prior to the end of finals for the semester in which the student is enrolled. It is the student's responsibility to make sure that these arrangements are made with the mentor and communicated to the academic advisor.

If an extended deadline is not authorized by the mentor or department, an unfinished incomplete grade will automatically change to a U 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 U 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 <https://policies.ncsu.edu/regulation/reg-02-50-03>

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### **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 (<https://dso.dasa.ncsu.edu/>) 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 <https://policies.ncsu.edu/regulation/reg-02-20-01>

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### **Academic Integrity**

Students are required to comply with the university policy on academic integrity found in the Code of Student Conduct found at <https://policies.ncsu.edu/policy/pol-11-35-01>. Students must ensure that all aspects of the experience conform to the Code of Student Conduct.

We take seriously our responsibility to provide a fair environment for all students, so all suspected violations of this policy will be reported to the Office of Student Conduct.

It is the department's understanding and expectation that the submission of any assignment means that the student neither gave nor received unauthorized aid on that assignment. Giving or receiving unauthorized aid will result in a 'U' for this course as well as more severe disciplinary penalties.

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## **BSC 494 – Teaching Experience (1-3 cr)**

### **Description**

BSC 494 provides an opportunity for students to gain experience with some aspect of teaching, including one or more of the following: course planning and preparation, leading or facilitating lessons or other educational activities, assessment in teaching, or education research. A minimum of 42 hours must be completed for each credit hour earned (3 credits maximum for a given experience). The experience must be arranged by the student and approved by the Department of Biological Sciences in advance. To gain approval, students must submit the completed BSC 494 Contract, signed by their 494 supervisor and by their academic advisor. If the experience involves education research, the research mentor is encouraged to require a research paper or poster presentation as part of the work expectations when appropriate. In addition to the work described in the contract, students will complete a series of reflective written assignments during and at the end of their 494 experience.

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### **Learning Outcomes**

After completing BSC 494, students will be able to:

- describe the goal of the course or project with which they were involved and their specific role(s) in that project
  - describe the professional competencies they developed or deepened through their 494 experience
  - explain how they applied their academic (in-class) experiences to their 494 experience
  - describe the knowledge and skills they gained or further developed through their 494 experience
  - describe how their 494 experience changed or strengthened their academic or career goals
  - explain how their understanding of teaching and/or learning was impacted by their 494 experience
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### **Course Schedule**

There are no set meeting times for BSC 494 – the work schedule is by agreement between you and your supervisor. Time commitment is expected to be a minimum of 42 hours engaged in the learning experience (including all work expectations specified by the supervisor) for every 1 credit hour earned, plus time spent on several short written assignments to be submitted through Moodle. Due dates for these assignments are provided on the course Moodle site.

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### **Prerequisites and Restrictions**

Restricted to students who have completed the required course contract (attached) and received the approval of their proposed BSC 494 supervisor, their academic advisor, and the Department of Biological Sciences. Students must submit the completed contract before they will be enrolled in the course and added to the course Moodle site. Students can repeat BSC 494 for different or more advanced experiences, but there may be a limit on the number of credit hours that they can use toward graduation in their curriculum. Students must ensure that all aspects of the experience conform to the Code of Student Conduct.

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## **Honor Pledge**

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

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## **Requirements for Auditors (AU)**

BSC 494 cannot be audited.

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## **Moodle Website and Electronically-Hosted Course Components**

You will submit required materials via the course Moodle website during and at the end of your learning experience. You should be able to access the course website at [http:// wolfware.ncsu.edu](http://wolfware.ncsu.edu).

You will not be required to disclose personally identifiable information to other students in the course.

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## **Grading**

The basis of the S or U grade will be the contract agreed to by the student, the 494 supervisor, and the student's academic advisor. Students must complete the minimum number of hours of expected work and any other requirements as specified in the BSC 494 contract, as well as all written assignments on Moodle. It is possible that the supervisor will require an additional written assignment or presentation of some form, and there should be a clear explanation on the BSC 494 contract with regard to those expectations.

The written assignments on Moodle will include four sets of questions with due dates spread throughout the experience. The first set of questions (10%), due early in the experience, involve describing the nature of the learning experience and the student's expectations for that experience. The second set of questions (30%) involve a reflection on knowledge and skills (including professional competencies) gained or deepened during the experience. The third set of questions (30%) involve a reflection on the relationship between the student's academic (in-class) studies and the learning experience. The final set of questions (30%), due after the experience has been completed, will involve a broader reflection on what the student learned from the experience and how they have grown as a result of the experience.

To earn an 'S' for BSC 494, students must answer all Moodle questions and must earn at least 70% on the Moodle questions (combined). If the supervisor requires an additional assignment (e.g., proposal, paper, poster, presentation) and wants that assignment to contribute to the grade calculation, the student must answer all Moodle questions and must earn at least 70% on the Moodle questions (combined) and at least 70% on the additional assignment to earn an 'S' for BSC 494.

Student participation and completion of the required work will be verified by having the supervisor complete a brief evaluation.

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## **Policies on Incomplete Grades and Late Assignments**

Incompletes are allowed only at the discretion of the supervisor and advisor. Detailed arrangements for completion of the required work must be made prior to the end of finals for the semester in which the student is enrolled. It is the student's responsibility to make sure that these arrangements are made with the mentor and communicated to the academic advisor.

If an extended deadline is not authorized by the mentor or department, an unfinished incomplete grade will automatically change to a U 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 U 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 <https://policies.ncsu.edu/regulation/reg-02-50-03>

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### **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 (<https://dso.dasa.ncsu.edu/>) 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 <https://policies.ncsu.edu/regulation/reg-02-20-01>

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### **Policy on 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 <https://policies.ncsu.edu/regulation/reg-04-25-02>. 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.

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### **Academic Integrity**

Students are required to comply with the university policy on academic integrity found in the Code of Student Conduct found at <https://policies.ncsu.edu/policy/pol-11-35-01>. Students must ensure that all aspects of the experience conform to the Code of Student Conduct.

We take seriously our responsibility to provide a fair environment for all students, so all suspected violations of this policy will be reported to the Office of Student Conduct.

It is the department's understanding and expectation that the submission of any assignment means that the student neither gave nor received unauthorized aid on that assignment. Giving or receiving unauthorized aid will result in a 'U' for this course as well as more severe disciplinary penalties.

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# CH 431 Course Syllabus

## CH 431 – Physical Chemistry I

**Section 001**

**Spring 2016**

**3 Credit Hours**

### Course Description

Development of the basic concepts of quantum mechanics and wavefunctions as applied to atomic structure, to the translational, rotational and vibrational motion in molecules, and to molecular spectroscopy. Development of partition functions as applied to thermodynamic properties of materials.

### Learning Outcomes

1. Apply the basic principles of quantum mechanics to stationary states of microscopic systems
2. Describe the atomic structure of hydrogenic atoms using quantum mechanics
3. Develop a quantum mechanical model of translational, rotational and vibrational motion in molecular systems.
4. Characterize the structure of molecules using data from microwave spectroscopy, infrared spectroscopy, and magnetic resonance methods.
5. Construct partition functions for simple molecular systems.
6. Apply methods of statistical thermodynamics to describe thermodynamic behavior of bulk materials.

### Course Structure

The course consists of two 75 minute lecture periods and one 50 minute problem session a week. Exams and quizzes will be given in class.

### Course Policies

Use of computers, ipads, communication devices and other electronic devices for reasons other than note taking or classroom activities is prohibited.

### Instructor

**Alex I. Smirnov** - *Instructor*

**Email:** [Alex\\_Smirnov@ncsu.edu](mailto:Alex_Smirnov@ncsu.edu)

**Phone:** 919-513-4377

**Fax:** 919-515-5079

**Office Location:** 614-F Cox Hall

**Office Hours:** 4:00 – 5:00 pm Tuesdays and Thursdays, or by appointment

### Course Meetings

## Lecture

**Days:** T Th

**Time:** 10:15 am – 11:30 am

**Campus:** Main

**Location:** 331 Dabney Hall

*This meeting is required.*

## Problem Session

**Days:** F

**Time:** various (check your schedule for your section)

**Campus:** Main

**Location:** 330 Dabney Hall

*This meeting is required.*

## Course Materials

### Textbooks

**Atkins' Physical Chemistry** – Peter Atkins & Julio De Paula

**Edition:** 10th Edition

**Cost:** \$195.00 at the NCSU bookstore

*This textbook is required.*

**More information about the textbook:** This book will be used for all Reading and Exercise assignments. *Note that while previous editions, such as "Physical Chemistry" by Peter Atkins & Julio De Paula, 9th and 8th Editions are very similar, the Chapter numbering is different. The new edition also has extended sets of problems and exercises. Thus, while these earlier editions could also be used, the students are advised to refer to the Tenth Edition for cross-referencing the reading and exercise assignments given in class. IF USING OLDER EDITIONS, IT IS THE STUDENT'S RESPONSIBILITY TO CROSS REFERENCE THE ASSIGNMENTS! The text of all assigned homework problems will also be posted on the class website.*

### Additional Textbook Materials

None

### Expenses

None.

### Materials

None.

## Requisites and Restrictions

### Prerequisites

CH 201, MA 242, PY 203 or 208

### Co-requisites

MA 341

### Restrictions

None

## General Education Program (GEP) Information

## GEP Category

This course does not satisfy the requirements for any GEP category.

## GEP Category Outcomes

N/A

## How This Course Will Fulfill GEP Category Outcomes

N/A

## GEP Co-requisites

This course does not satisfy the requirements for any GEP Co-requisite.

## GEP Co-requisite Outcomes

N/A

## How This Course Will Fulfill GEP Co-requisite Outcomes

N/A

## Transportation

Non-scheduled class time for field trips or out-of-class activities is NOT required for this class.

## Safety & Risk Assumptions

None

**NOTE: Students are required to purchase liability insurance.** For more information, see <http://www2.acs.ncsu.edu/insurance/>

## Grading

### Grade Components

Component	Weight	Details
Three midterm exams at 100 points each	300 pts	See below
Six quizzes (five with credit) at 20 points each	100 pts	See below
Homework assignments	100 pts	See below
Final Exam	200 pts	

**All graded mid-term exams and quizzes** are kept by the instructor for one week (7 days) after the day graded assignments become available to the students. The instructor cannot be responsible for keeping these graded assignments beyond the 7-day period. **Questions regarding specific grades** should be addressed within two class-days (one week) after graded assignment was made available to the student.

**More information on quizzes :** Announced and unannounced quizzes will be given in class or during the problem session. Your best five out of six quiz grades will be counted toward your final grade. Your lowest quiz grade will be dropped.

**More information on homework assignments :** Six homework assignments which total to 100 points will be assigned during the semester.

**Extra credit** : None. No extra credit assignments will be given for any reason.

## Letter Grades

Final letter grades will be based on the percentage of the 700 total points accumulated.

**This Course uses Standard NCSU Letter Grading:**

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

Students achieving a grade of D+ or below according to the grading scale above will receive a U.

Additional requirements : none.

## 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>.

Additional requirements : none.

## 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>.

[Students may be given an IN grade](#) for work not completed because of a serious interruption in their work not caused by their own negligence. An IN is not a substitute for an F when the student's performance in the course is deserving of failing. An IN 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. Work undertaken to make up the IN grade should be limited to the completion of the missed work.

Additional requirements : none.

### **Late Assignments**

Late assignments will not be accepted. (See make-up work policy.)

### **Attendance Policy**

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

### **Attendance Policy**

Attendance at lectures and problem sessions is expected. Attendance does not directly count toward your grade. However, missing a class with an unexcused absence on a day when an exam or quiz is given will result in a zero for that exam or quiz.

### **Absences Policy**

Provision for missed exams or quizzes will be provided only for students with **documented excused absences** that are acceptable [according to University policy](#).

### **Makeup Work Policy**

Students missing an exam or quiz with a documented excused absence will be given an alternative (make-up) exam or quiz. If students are unable to submit a homework assignment due to an excused absence, the student's homework score will be prorated (the average of the other assignments will be substituted for the missing grade).

### **Additional Excuses Policy**

N/A

### **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 exams and quizzes are expected to be carried out in accordance with the Code of Student Conduct adopted by the University.

#### **Academic Honesty**

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

#### **Honor Pledge**

Honor Pledge must be signed on each exam/quiz and it is the instructor's understanding and expectation that the student's signature means that the student neither gave nor received unauthorized aid. Exams/quizzes without student's signature will not be accepted and graded.

### **Electronically-Hosted Course Components**

Lecture notes will be posted on the course website at least 24 hours before the lecture. It is your responsibility to have notes available (either in print or electronic form) during lectures.

This course does not involve electronic sharing or posting of personally identifiable student work. No assignments are required to be submitted electronically. If you, however, choose to submit homework assignments electronically (by e-mail to TA) the e-mail should be dated "before the deadline" upon receiving.

### 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/](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	Topic	Reading
Jan 7	Overview of course. Failure of Classical Physics and rise of Quantum Mechanics	7A.1 -7A.2
Jan 12	Principles of Quantum Mechanics. Schrödinger equation.	7B
Jan 14	Principles of Quantum Mechanics	7C
Jan 19	Translational Motion. Particle in a box	8A
Jan 21	Translational motion in 2 and 3-d. Tunneling.	8A
Jan 26	Vibrational Motion. Harmonic oscillator	8B
Jan 28	Rotational motion. Rigid rotor.	8C
Feb 2	Rotational motion in three dimensions. Spin.	8C
Feb 4	Molecular Spectroscopy 1: Rotational Spectra	12A-12C
Feb 9	<i>Examination I</i>	

Feb 11	Molecular Spectroscopy: Vibrations of Diatomic Molecules	12D, 12E
Feb 16	Molecular Spectroscopy: Rotational-Vibrational Spectra	12D
Feb 18	Molecular Spectroscopy: Vibrations of Polyatomic Molecules	
Feb 23	Spectroscopy: Magnetic Resonance	14
Feb 25	Hydrogen atom	9.1-9.3
Mar 1	Hydrogen atom and many-electron atoms	9.4-9.9
Mar 3	Many-electron atoms	9.4-9.9
Mar 8	<i>Spring Break</i>	
Mar 10	<i>Spring Break</i>	
Mar 15	Statistical thermodynamics. Distribution of molecular states	15A
Mar 17	<i>Examination II</i>	
Mar 22	Catch-up lecture	
Mar 24	Molecular partition function	15B
Mar 29	Molecular partition function	15B
Mar 31	Internal energy and statistical entropy	15C
Apr 5	Canonical partitioning function.	15D
Apr 7	Thermodynamic functions.	15E-15F
Apr 12	Thermodynamic functions. Chemical potential & equilibrium constant	15E-15F
Apr 14	<i>Examination III</i>	
Apr 19	Catch-up lecture/Review	
Apr 21	Catch-up lecture/Review	
Apr 28	<b><i>FINAL EXAM – 8:00 am – 11:00 am</i></b>	

# CH 433 Course Syllabus

## CH 433 – Physical Chemistry II

**Section 001**

**Spring 2016**

**3 Credit Hours**

### Course Description

A classical thermodynamic treatment of states of matter, activities and chemical potentials, energy changes, equilibria, and electrochemical processes. The kinetics of multi-step, catalytic and enzyme reactions.

### Learning Outcomes

1. Analyze the validity of equations of state for ideal and non-ideal behavior using experimental data.
2. Define the activity of a species in different environments and relate activity to vapor pressure, concentration and activity coefficients.
3. Determine activities and chemical potentials for gas phase mixtures, solutions and solids.
4. Apply activities and chemical potentials to phase transitions and equilibria between phases.
5. Determine the efficiency of engines or processes using energy and entropy considerations.
6. Apply energy, enthalpy, entropy and chemical potential considerations to analyze chemical reactions under equilibrium and non-equilibrium conditions, and at different temperatures and pressures.
7. Search the National Institute of Standards databases for thermodynamic information as a function of temperature and pressure, and apply the information to chemical reactions.
8. Derive the Nernst equation for the electrochemical potential of species in solution.
9. Apply the Nernst equation to reactions in solution, electrolysis, and to different types of batteries and fuel cells.
10. Determine rate laws from experimental data.
11. Describe one-step reactions using transition state theory and collision theory.
12. Propose mechanisms and determine rate laws for complex, multi-step reactions using steady state and equilibrium considerations for elementary steps.
13. Analyze enzyme-substrate reactions by determining rate laws for proposed multi-step processes.
14. Apply proposed mechanisms to atmospheric processes, surface reactions and homogeneous catalysis.



15. Develop and present an oral presentation on a contemporary energy topic and relate analysis of the topic to the thermodynamic and kinetic principles presented in the course.

## Course Structure

The course consists of two 75 minute lecture periods and one 50 minute problem session a week. Exams and quizzes will be given in class.

## Course Policies

Use of computers, ipads, communication devices and other electronic devices for reasons other than note taking or classroom activities is prohibited.

## Instructors

**Jerry L. Whitten** - *Instructor*

**Email:** [whitten@ncsu.edu](mailto:whitten@ncsu.edu)

**Phone:** 919-515-7960

**Fax:** 919-515-5079

**Office Location:** 604B Cox Hall

**Office Hours:** 4:00 – 5:00 pm Tuesdays and Thursdays, or by appointment

## Course Meetings

### Lecture

**Days:** T Th

**Time:** 11:45 am – 1:00 pm

**Campus:** Main

**Location:** 330 Dabney Hall

*This meeting is required.*

### Problem Session

**Days:** M

**Time:** various (check your schedule for your section)

**Campus:** Main

**Location:** 330 Dabney Hall

*This meeting is required.*

## Course Materials

### Textbooks

**Atkins' Physical Chemistry** – *Peter Atkins & Julio De Paula*

**Edition:** 10th Edition

**Cost:** \$195.00 at the NCSU bookstore

*This textbook is required.*

### Additional Textbook Materials

None

### Expenses

None.

## Materials

None.

## Requisites and Restrictions

### Prerequisites

MA 341

### Co-requisites

None

### Restrictions

None

## General Education Program (GEP) Information

### GEP Category

This course does not satisfy the requirements for any GEP category.

### GEP Category Outcomes

N/A

### How This Course Will Fulfill GEP Category Outcomes

N/A

### GEP Co-requisites

This course does not satisfy the requirements for any GEP Co-requisite.

### GEP Co-requisite Outcomes

N/A

### How This Course Will Fulfill GEP Co-requisite Outcomes

N/A

## Transportation

Non-scheduled class time for field trips or out-of-class activities is NOT required for this class.

## Safety & Risk Assumptions

None

**NOTE: Students are required to purchase liability insurance.** For more information, see <http://www2.acs.ncsu.edu/insurance/>

## Grading

### Grade Components

Component	Weight	Details
Three midterm exams	55%	See below
Six quizzes (five with credit)	10%	See below

Component	Weight	Details
Homework assignments	10%	See below
Final Exam	25%	

**All graded mid-term exams and quizzes** are kept by the instructor for one week (7 days) after the day graded assignments become available to the students. The instructor cannot be responsible for keeping these graded assignments beyond the 7-day period. **Questions regarding specific grades** should be addressed within two class-days (one week) after graded assignment was made available to the student.

**More information on exams :** 1 sheet of notes (single-sided) will be allowed on a midterm exam. 2 sheets of notes will be allowed on the final exam. Exam 1 will be worth 15% of your grade. Exams 2 and 3 will each be worth 20% of your grade.

**More information on quizzes :** Announced and unannounced quizzes will be given in class or during the problem session. Your best five out of six quiz grades will be counted toward your final grade. Your lowest quiz grade will be dropped.

**More information on homework assignments :** Six problem sets will be assigned at regular intervals in WebAssign. Together they will constitute 10% of your grade.

**Extra credit :** None. No extra credit assignments will be given for any reason.

## Letter Grades

### This Course uses Standard NCSU Letter Grading:

97 ≤	<b>A+</b>	≤	100
93 ≤	<b>A</b>	<	97
90 ≤	<b>A-</b>	<	93
87 ≤	<b>B+</b>	<	90
83 ≤	<b>B</b>	<	87
80 ≤	<b>B-</b>	<	83
77 ≤	<b>C+</b>	<	80
73 ≤	<b>C</b>	<	77
70 ≤	<b>C-</b>	<	73
67 ≤	<b>D+</b>	<	70
63 ≤	<b>D</b>	<	67
60 ≤	<b>D-</b>	<	63
0 ≤	<b>F</b>	<	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/req-02-20-15>.

Students achieving a grade of D+ or below according to the grading scale above will receive a U.

Additional requirements : none.

## 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>.

Additional requirements : none.

## 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>.

[Students may be given an IN grade](#) for work not completed because of a serious interruption in their work not caused by their own negligence. An IN is not a substitute for an F when the student's performance in the course is deserving of failing. An IN 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. Work undertaken to make up the IN grade should be limited to the completion of the missed work.

Additional requirements : none.

## Late Assignments

Late assignments will not be accepted. (See make-up work policy.)

## Attendance Policy

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

## Attendance Policy

Attendance at lectures and problem sessions is expected. Attendance does not directly count toward your grade. However, missing a class with an unexcused absence on a day when an exam or quiz is given will result in a zero for that exam or quiz.

## Absences Policy

Provision for missed exams or quizzes will be provided only for students with **documented excused absences** that are acceptable [according to University policy](#).

## Makeup Work Policy

Students missing an exam or quiz with a documented excused absence will be given an alternative (make-up) exam or quiz. If students are unable to submit a homework assignment due to an excused absence, the student's homework score will be prorated (the average of the other assignments will be substituted for the missing grade).

## 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 exams and quizzes are expected to be carried out in accordance with the Code of Student Conduct adopted by the University.

## **Academic Honesty**

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

Additional requirements TBD.

## **Honor Pledge**

Honor Pledge must be signed on each exam/quiz and it is the instructor's understanding and expectation that the student's signature means that the student neither gave nor received unauthorized aid. Exams/quizzes without student's signature will not be accepted and graded.

## **Electronically-Hosted Course Components**

There are no electronically-hosted components for this 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/](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.

THIS CALENDAR SHOULD BE USED ONLY AS A ROUGH OUTLINE; CLASS ATTENDANCE IS REQUIRED IN ORDER TO KNOW WHAT WILL BE COVERED. (Reading refers to sections in Atkins, 10<sup>th</sup> Ed.)

<u>Date</u>	<u>Lecture</u>	<u>Reading</u>	
Jan	7	Overview of the course. Energy, Thermodynamic variables	1A+Math 1
	12	1 <sup>st</sup> law of thermodynamics. Work and heat.	2.A
	14	Thermodynamic cycles, Enthalpy, Thermodynamic cycles	2.B
	19	Enthalpy of chemical reactions. State functions.	2.C-D
	21	2 <sup>nd</sup> law of thermodynamics. Entropy as a new state function.	2.E,3.A
	26	The Carnot cycle; efficiency of heat engines.	3.A
	28	Calculating entropy changes. 3 <sup>rd</sup> Law of Thermodynamics	3.B
Feb	2	<b>Exam 1</b>	
	4	Gibbs free energy	3.C
	9	The Gibbs-Helmholtz equation, Spontaneity.	3.D
	11	Summary of thermodynamic functions. The Maxwell Relations.	3.D
	16	Clausius-Clapeyron equation. Basic phase diagrams	4.A,4.B
	18	Raoult's law. Henry's law. Colligative properties	5.A, 5.B
	23	Binary mixtures and phase diagrams. The lever rule. Activities.	5.C, 5.E
	25	Equilibria, the equilibrium constant.	6.A
Mar	1	Le Chatelier principle	6.B
	3	Electrochemistry	6.C,6.D.
	8	<b>Spring Break – no class.</b>	
	10	<b>Spring Break – no class.</b>	
	15	<b>Exam 2</b>	
	17	Kinetic theory of gases	1.B, 19.A
	22	Maxwell-Boltzmann distribution. Molecular collisions.	1.B, 19.A
	24	Review/catching up	
Apr	29	Diffusion, viscosity. Einstein-Stokes relations.	19.B, 19.C
	31	Chemical Kinetics, reaction constants and rate laws	20.A, 20.B,
	5	Series reactions and limiting steps	20.C
	7	Relaxation methods. Transition state theory.	20.D
	12	Steady-state approximation	20.E, 20.F
	14	<b>Exam 3</b>	
	19	Enzyme Kinetics	20.H
	21	Review/catching up	
<b>May 5</b>	<b>Final Examination (8:00-11:00 a.m.)</b>		

# CH 437 Course Syllabus

## CH 437 – Physical Chemistry for Engineers

**Section 001**

**Spring 2016**

**4 Credit Hours**

### Course Description

Selected physiochemical principles including quantum theory, spectroscopy, statistical thermodynamics, and rates of chemical reactions. Credit may not be claimed for both CH 431 and CH 437.

### Learning Outcomes

1. Apply the basic principles of quantum mechanics to translational, rotational and vibrational motion in molecular systems.
2. Analyze the role of anharmonicity in molecular systems.
3. Analyze molecular spectra.
4. Apply concepts of states and transitions to electronic, infrared and microwave spectra.
5. Construct partition functions for simple molecular systems.
6. Apply methods of statistical thermodynamics to describe thermodynamic behavior of gases, liquids and solids.
7. Determine rate laws from experimental data.
8. Derive rate laws for complex multi-step reactions.

### Course Structure

The course consists of two 75 minute lecture periods and one 50 minute recitation a week. Exams will be given in class. Quizzes will be given in class and in recitation.

### Course Policies

Use of computers, ipads, communication devices and other electronic devices for reasons other than note taking or classroom activities is prohibited.

### Instructor

**Tatyana I. Smirnova** - *Instructor*

**Email:** [tismirno@ncsu.edu](mailto:tismirno@ncsu.edu)

**Phone:** 919-513-4375

**Fax:** 919-515-5079

**Office Location:** 612-B Cox Hall

**Office Hours:** 4:00 – 5:00 pm Mondays and Wednesdays, or by appointment

### Course Meetings

#### Lecture

**Days:** T Th  
**Time:** 11:45 am – 1:00 pm  
**Campus:** Main  
**Location:** 331 Dabney Hall  
*This meeting is required.*

## Recitation

**Days:** F  
**Time:** various (check your schedule for your section)  
**Campus:** Main  
**Location:** 330 Dabney Hall  
*This meeting is required.*

## Course Materials

### Textbooks

**Atkins' Physical Chemistry** – Peter Atkins & Julio De Paula

**Edition:** 10th Edition

**Cost:** \$195.00 at the NCSU bookstore

*This textbook is required.*

**More information about the textbook:** This book will be used for all Reading and Exercise assignments. *Note that while previous editions, such as "Physical Chemistry" by Peter Atkins & Julio De Paula, 9th and 8th Editions are very similar, the Chapter numbering is different. The new edition also has extended sets of problems and exercises. Thus, while these earlier editions could also be used, the students are advised **to refer to the Tenth Edition for cross-referencing the reading and exercise assignments** given in class. IF USING OLDER EDITIONS, IT IS THE STUDENT' RESPONSIBILITY TO CROSS REFERENCE THE ASSIGNMENTS! The **text** of all assigned homework problems will also be posted on the class website.*

### Additional Textbook Materials

None

### Expenses

None.

### Materials

None.

## Requisites and Restrictions

### Prerequisites

PY 208, CHE 315, MA 341

### Co-requisites

none

### Restrictions

None

## General Education Program (GEP) Information

### GEP Category



This course does not satisfy the requirements for any GEP category.

### GEP Category Outcomes

N/A

### How This Course Will Fulfill GEP Category Outcomes

N/A

### GEP Co-requisites

This course does not satisfy the requirements for any GEP Co-requisite.

### GEP Co-requisite Outcomes

N/A

### How This Course Will Fulfill GEP Co-requisite Outcomes

N/A

## Transportation

Non-scheduled class time for field trips or out-of-class activities is NOT required for this class.

## Safety & Risk Assumptions

None

**NOTE: Students are required to purchase liability insurance.** For more information, see <http://www2.acs.ncsu.edu/insurance/>

## Grading

### Grade Components

Component	Weight	Details
Three midterm exams at 100 points each	300 pts	See below
Six quizzes (five with credit) at 20 points each	100 pts	See below
Homework assignments	100 pts	See below
Final Exam	200 pts	

**All graded mid-term exams and quizzes** are kept by the instructor for one week (7 days) after the day graded assignments become available to the students. The instructor cannot be responsible for keeping these graded assignments beyond the 7-day period. **Questions regarding specific grades** should be addressed within two class-days (one week) after graded assignment was made available to the student.

**More information on quizzes :** Announced and unannounced quizzes will be given in class or during the problem session. Your best five out of six quiz grades will be counted toward your final grade. Your lowest quiz grade will be dropped.

**More information on homework assignments :** Six homework assignments which total to 100 points will be assigned during the semester. No assignments are required to be submitted electronically. If you, however, choose to submit homework assignments electronically (by e-mail to TA) the e-mail should be dated "before the deadline" upon receiving.

**Extra credit** : None. No extra credit assignments will be given for any reason.

## Letter Grades

Final letter grades will be based on the percentage of the 700 total points accumulated.

**This Course uses Standard NCSU Letter Grading:**

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

Students achieving a grade of D+ or below according to the grading scale above will receive a U.

Additional requirements : none.

## 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>.

Additional requirements : none.

## 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>.

[Students may be given an IN grade](#) for work not completed because of a serious interruption in their work not caused by their own negligence. An IN is not a substitute for an F when the student's performance in the course is deserving of failing. An IN 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. Work undertaken to make up the IN grade should be limited to the completion of the missed work.

Additional requirements : none.

### **Late Assignments**

Late assignments will not be accepted. (See make-up work policy.)

### **Attendance Policy**

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

### **Attendance Policy**

Attendance at lectures and problem sessions is expected. Attendance does not directly count toward your grade. However, missing a class with an unexcused absence on a day when an exam or quiz is given will result in a zero for that exam or quiz.

### **Absences Policy**

Provision for missed exams or quizzes will be provided only for students with **documented excused absences** that are acceptable [according to University policy](#).

### **Makeup Work Policy**

Students missing an exam or quiz with a documented excused absence will be given an alternative (make-up) exam or quiz. If students are unable to submit a homework assignment due to an excused absence, the student's homework score will be prorated (the average of the other assignments will be substituted for the missing grade).

### **Additional Excuses Policy**

N/A

### **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 exams and quizzes are expected to be carried out in accordance with the Code of Student Conduct adopted by the University.

#### **Academic Honesty**

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

#### **Honor Pledge**

Honor Pledge must be signed on each exam/quiz and it is the instructor's understanding and expectation that the student's signature means that the student neither gave nor received unauthorized aid. Exams/quizzes without student's signature will not be accepted and graded.

### **Electronically-Hosted Course Components**

Lecture notes will be posted on the course website at least 24 hours before the lecture. It is your responsibility to have notes available (either in print or electronic form) during lectures.

This course does not involve electronic sharing or posting of personally identifiable student work. No assignments are required to be submitted electronically. If you, however, choose to submit homework assignments electronically (by e-mail to TA) the e-mail should be dated "before the deadline" upon receiving.

### 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/](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	Topic	Reading
Jan 7	Overview of course. Failure of Classical Physics and rise of Quantum Mechanics	7A.1 -7A.2
Jan 12	Principles of Quantum Mechanics. Schrödinger equation.	7B
Jan 14	Principles of Quantum Mechanics	7C
Jan 19	Translational Motion. Particle in a box	8A
Jan 21	Translational motion in 2 and 3-d. Tunneling.	8A
Jan 26	Vibrational Motion. Harmonic oscillator	8B
Jan 28	Rotational motion. Rigid rotor.	8C
Feb 2	Rotational motion in three dimensions. Spin.	8C
Feb 4	Molecular Spectroscopy 1: Rotational Spectra	12A-12C
Feb 9	<i>Examination I</i>	

Feb 11	Molecular Spectroscopy: Vibrations of Diatomic Molecules	12D, 12E
Feb 16	Molecular Spectroscopy: Rotational-Vibrational Spectra	12D
Feb 18	Spectroscopy 3: Magnetic Resonance	14
Feb 23	Statistical thermodynamics. Distribution of molecular states	15A
Feb 25	Molecular partition function	15B
Mar 1	Internal energy and statistical entropy	15C
Mar 3	Canonical partitioning function	15D
Mar 8	<i>Spring Break</i>	
Mar 10	<i>Spring Break</i>	
Mar 15	Thermodynamic functions. Molecular partition function. Chemical potential & equilibrium constant	15E-F
Mar 17	<i>Examination II</i>	
Mar 22	Rate of chemical reactions. Experimental methods to study kinetics	20A
Mar 24	Reactions approaching equilibrium. Relaxation methods. Temperature effects	20C
Mar 29	Elementary, consecutive and parallel reactions	20E
Mar 31	Polymerization Kinetics, Complex Reactions, Enzyme Kinetics	20F
Apr 5	Reactions Dynamics	21A-B
Apr 7	Transition State Theory	21C
Apr 12	Kinetic isotope effects	
Apr 14	<i>Examination III</i>	
Apr 19	Catch-up lecture/Review	
Apr 21	Catch-up lecture/Review	
May 5	<b>FINAL EXAM – 8:00 am – 11:00 am</b>	

**From:** Gregory Neyhart [mailto:[gneyhart@ncsu.edu](mailto:gneyhart@ncsu.edu)]  
**Sent:** Monday, February 08, 2016 12:29 PM  
**To:** Cheryl Cass; Lisa Bullard; Med Byrd  
**Subject:** Consultation - CH 437

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Lisa, Med and Cheryl,

Chemistry is seeking a minor course action on CH 437, and this course is listed as an elective in each of your programs. The course itself is not changing. However, CH 431 and CH 433, Physical Chemistry I and II, have been changed with respect to the order in which topics are introduced. Therefore, CH 437 now more closely resembles CH 431.

The revision is in the course description to change a sentence from "Credit may not be claimed for both CH 433 and CH 437" to "Credit may not be claimed for both CH 431 and CH 437".

If you wish to comment and can do so this week, please do. The course action, extracted from CourseLeaf, is attached.

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

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**Lisa Bullard**

Feb 8

to me

Greg, thanks for the notification. Chemical Engineering is fine with the change.

Regards,  
Lisa

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**Cheryl Cass**

Feb 9

to me, Lisa, Med

Thanks, Greg. OK with MSE.

Cheryl

**Cheryl Cass, Ph.D.**

Director of Undergraduate Programs  
Teaching Assistant Professor  
Department of Materials Science and Engineering  
North Carolina State University  
Office: 3002B Engineering Building I (Centennial Campus)  
Phone: [\(919\) 515-2479](tel:9195152479)

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**Med Byrd**

Feb 9

to Cheryl, me, Lisa

I will follow Lisa's lead on this one, since the course is one of the 4-hour chem electives for our dual degree. Thanks.

**SYLLABUS**  
**MUS 120: Introduction to Music Theory**

Room: Price 201  
Instructor: Dr. John Fuller  
Office: 204 Price Music Center  
Office Phone: 919.515.8284  
Email: john\_fuller@ncsu.edu  
Office Hours: Mondays and Wednesdays, 9:00 - 10:00 a.m., or by appointment

**Course Description:** Introduction to Music Theory is designed for students with minimal or no music theory background and covers the fundamentals of music, including note reading in treble and bass clefs, rhythm, meter, scales, key signatures, intervals, triads, and basic keyboard skills. This course prepares students for entry into Music Theory I (MUS 103) and Aural Skills I (MUS 104), although students may elect to test out by means of a placement test. Students may be required to provide their own transportation to and cover the cost of an on- or off-campus event. Auditing is not permitted. Prerequisites: None.

**Student Learning Outcomes:** By the end of the semester the student will be able to:

- Identify theoretical principles – including rhythm, intervals, keys, scales, and chords – inherent in the music of Western cultures
- Explain theoretical concepts occurring in compositions after listening to live and recorded performances.
- Demonstrate accepted standards of melodic construction and artistic creativity.
- Demonstrate ability to confidently read notation in treble and bass clefs through written exercises in class and homework assignments.
- Distinguish between simple and compound meters in written and sung exercises.
- Recognize and construct interval structures of various qualities and quantities.
- Exhibit knowledge of all forms of major and minor scale structures as found in Western Art Music through visual and aural analysis.
- Display through analysis a recognition of triads in all forms and inversions and an ability to read popular chord symbols.
- Perform short musical etudes and excerpts through sight singing and on the keyboard.

**GEP Student Learning Outcomes and Means of Assessment for Visual and Performing Arts**

1. **Deepen understanding of aesthetic, cultural, and historical dimensions of artistic traditions.**

Student Learning Outcomes: Students will identify theoretical components – including rhythm, intervals, keys, scales, and chords – in passages from Western art, folk, and popular music of the past 400 years.



Means of Assessment: Students will complete regular homework and tests that measure their comprehension of the basic theoretical principles establishing Western music. Sample homework or test question: You are given the melody of the English folk song "Greensleeves." Create a pitch collection and then determine the minor scale on which this song is based.

- 2. Strengthen their ability to interpret and make critical judgments about the arts through the analysis of structure, form, and style of specific works.**

Student Learning Outcomes: Students will explain theoretical concepts occurring in compositions after listening to live and recorded performances.

Means of Assessment: Students will attend a live concert and write a graded essay that measures their ability to perceive and evaluate the comparative treatment of musical elements after only one hearing.

- 3. Strengthen their ability to create, recreate, or evaluate art based upon techniques and standards appropriate to the genre.**

Student Learning Outcomes: Students will demonstrate accepted standards of melodic construction and artistic creativity.

Means of Assessment: Students will compose short melodies in given major or minor keys and will be graded for evidence of tonic orientation, pitch accuracy, coherent melodic contour, and rhythmic notation.

#### **Required Textbooks:**

- White, Gary C. *Music First!* 6<sup>th</sup> ed. New York: McGraw Hill, 2011. ISBN-13 9780073137742 (\$56). Audio examples located at [http://highered.mcgraw-hill.com/sites/0078110653/student\\_view0/index.html](http://highered.mcgraw-hill.com/sites/0078110653/student_view0/index.html)
- Thompson, John. John Thompson's Adult Preparatory Piano Book (Book One). Cincinnati: Willis Music Co. (\$10).

#### **Materials:**

- Manuscript paper (Staff paper), available for print-out at <http://musictheory.net/> (click "Staff Paper Generator") and <http://www.blanksheetmusic.net/>.
- Pencil (not pen) and eraser.

**Attendance Policy:** You should refer to the university's Attendance Policy.

[http://www.ncsu.edu/policies/academic\\_affairs/courses\\_undergrad/REG02.20.3.php](http://www.ncsu.edu/policies/academic_affairs/courses_undergrad/REG02.20.3.php) for clarification. Attendance is required and is taken at each class.

- Three (3) absences are permitted for any reason (excused or unexcused, emergency or non-emergency) without penalty in the cumulative course grade, with the following exceptions:
  - An absence cannot occur on the day of a test; otherwise official university documentation will be required to validate a make-up test.

- Only emergency or pre-approved absences on the day of a test will be acceptable in order to validate a make-up test (emergency absences constitute death or serious injury in the family, serious illness or injury of the student, court appearances and military functions as allowed by university policy).
- If you are absent on the day of a test, email Dr. Fuller **as soon as possible** about the nature of the absence. Make up tests must be taken **24 - 48 hours of the absence**, unless otherwise warranted. The grade will **ONLY** be validated pending official documentation of the absence.  
Upon your fourth and subsequent absences, you must provide official documentation of all previous absences in order to avoid the penalties outlined below. **Each unexcused absence above three will result in a three (3) percentage point reduction in the final grade.**
- Two (2) tardies of five (5) or more minutes will result in one (1) absence.
- Each instance of behavioral disturbance or sleeping in class will result in one (1) absence.
- During piano lab dates and times, each instance of doing work other than that from the John Thompson book or materials assigned by the instructor will result in one (1) class absence.
- If you realize **within the first two weeks of class** that (1) the anticipated number of absences will exceed the number of excused absences permitted in the course, or (2) your schedule necessitates regular tardiness or early dismissals, you should discuss the situation with the instructor right away.

#### **Classroom/Piano Lab Policy:**

- Cell Phones and other hand held devices are to be turned off and put away during class.
- No food or beverages will be allowed during class.

**Grading:** Course grading will be assessed by means of (1) tests, (2) out-of class assignments, (3) piano lab assignments, and (4) class attendance

- Tests:  
Nine tests will be given throughout the term and are graded equally; except for the last, all will take place at the beginning of class on the day following the conclusion of the preceding chapter. Unless documented circumstances warrant otherwise, all individual testing must be completed within a week of the original test date. See above regarding make-up tests.
- Out-of-class assignments:
  - Out-of-class assignments will be given during class and is to be submitted at the **BEGINNING** of class on the date announced.
    - Out-of-class work submitted after class on the due date will be deducted 10 points.
    - Out-of-class work submitted on the following day will be deducted 20 points.
    - Out-of-class work submitted at the beginning of the next class will be deducted 30 points.
    - Out-of-class work will not be accepted after the next class unless officially documented circumstances warrant it.

- If you are absent, out-of-class work must be submitted within 24 hours of the due time or receive a 20-point deduction. Out-of-class work submitted at the following class will be deducted 30 points. Out-of-class work should be placed in Dr. Fuller’s door (204 Price Music Center).
- Out-of-class work must be done neatly in pencil or will not be accepted.
- At times you may be asked to use the web to access interactive listening activities related to your text. MP3 files of all the notational examples in the text are now available on the Online Learning Center, [www.mhhe.com/musicfirst6e](http://www.mhhe.com/musicfirst6e).
- Piano Lab Assignments:  
You have been given ten assignments from the piano textbook. You are encouraged to practice the assignments on your own outside of class. When you are ready to perform a lesson (or multiple lessons), you may do so during keyboard class time or by appointment outside of class.
- Class Attendance:  
3 absences are allowed. **Each unexcused absence above three will result in a three (3) percentage point reduction in the final grade.**

**Grade weight:**

60% Tests  
 30% Out-of-class work  
 10% Piano Lab Assignments  
 100%

**Grading Scale:** Letter grades will be awarded on the following scale:

A+ 100 – 97.00	B+ 89.99 – 87.00	C+ 79.99 – 77.00	D+ 69.99 – 67.00
A 96.99 – 93.00	B 86.99 – 83.00	C 76.99 – 73.00	D 66.99 – 63.00
A- 92.99– 90.00	B- 82.99– 80.00	C- 72.99 – 70.00	D- 62.99– 60.00

**Transportation:** Students may be required to provide their own transportation to and cover the cost of an on- or off-campus event.

**Incomplete grade:** An “incomplete” is a temporary grade, given as a result of documented serious event. An IN is only appropriate when the student's record in the course is such that the successful completion of course expectations missed as a result of a documented serious event would enable that student to pass the course.

[http://www.ncsu.edu/policies/academic\\_affairs/grades\\_undergrad/REG02.50.3.php](http://www.ncsu.edu/policies/academic_affairs/grades_undergrad/REG02.50.3.php).

**Academic Integrity:** The instructor of this course fully expects you (the student) to complete all tests and assignments honestly. Students who violate University rules on academic integrity are subject to disciplinary penalties, including the possibility of failure in the course and /or dismissal from The University. Since such dishonesty harms the individual, all students, and the integrity of The University, policies on academic integrity will be strictly enforced.

All students should be aware of the University’s policy on academic integrity found in the Code of Student Conduct Policy (POL11.35.1)

[http://www.ncsu.edu/policies/student\\_services/student\\_discipline/POL11.35.1.php](http://www.ncsu.edu/policies/student_services/student_discipline/POL11.35.1.php)

Likewise, the Honor Pledge, "I have neither given nor received unauthorized aid on this test or assignment" will be signed on each written project verifying that you have neither given nor received unauthorized aid. See detailed explanation of academic honesty at [http://www.ncsu.edu/policies/student\\_services/student\\_discipline/POL11.35.1.php](http://www.ncsu.edu/policies/student_services/student_discipline/POL11.35.1.php)

**For Students with 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](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](http://www.ncsu.edu/policies/campus_environ) or [http://www.ncsu.edu/equal\\_op](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.

**For Your Assistance:**

**Music Theory Websites:**

<http://www.musictheory.net/>

<http://www.smu.edu/TOTW/toc.htm>

<http://www.music-theory.com/resources.html>

<http://www.emusictheory.com/learning.html>

<http://www.virtualpiano.net>

**Music Dictionaries:**

<http://www.oxfordmusiconline.com/subscriber/> (available with your NCSU account)

<http://www.music.vt.edu/musicdictionary/>

<http://library.thinkquest.org/2791/MDOPNSCR.htm>

**Music Resources available through your NCSU account:**

<http://www.lib.ncsu.edu/> (Click "Databases" and subject "Music")

## COURSE OUTLINE

Week (Dates)	Units of Study	Written and Performing Skills
January 10, 12, 14  <b>(Wednesday, January 19, Test #1 on Pitch)</b>	Pitch	<ol style="list-style-type: none"> <li>1. Demonstrate the fundamentals of notation, including middle C, octave, staff, treble/bass clef, ledger lines, grand staff, Helmholtz octave identification</li> <li>2. Begin solfège through numbers and symbolic notation</li> </ol>
January 24, 26, 28  <b>(Monday, January 31, Test #2 on Rhythm)</b>	Rhythm	<ol style="list-style-type: none"> <li>1. Perform simple and compound beat divisions in a variety of rhythm patterns</li> <li>2. Identify repeat signs</li> <li>3. Draw quarter and eight notes</li> <li>4. Engage in rhythmic ear training</li> <li>5. Identify rhythmic signs: rests, ties, dotted rests</li> <li>6. Perform solfège to musical notation</li> </ol>
February 4, 7, 9  <b>(Friday, February 11, Test #3 on Simple meter)</b>	Simple meter	<ol style="list-style-type: none"> <li>1. Distinguish between accents, meter, bar-line, measure, time signature, upbeat</li> <li>2. Perform simple meter to a variety of time signatures</li> <li>3. Perform dotted eighths and triplets</li> </ol>
February 16, 18  <b>(Monday, February 21, Test #4 on the Keyboard, Ch. #5)</b>	The Keyboard	<ol style="list-style-type: none"> <li>1. Write and perform half and whole steps,</li> <li>2. Identify accidentals, enharmonic equivalents</li> <li>3. Recognize key signatures</li> </ol>
February 25, 28, March 2  <b>(Friday, March 4, Test #5 on Compound meter, Ch. #4)</b>	Compound meter	<ol style="list-style-type: none"> <li>1. Distinguish between duple-, triple-, and quadruple-compound meter</li> <li>2. Learn rules of beaming in simple and compound meter</li> </ol>
March 16, 18, 21  <b>(Wednesday, March 23, Test #6 on Major scales and keys)</b>	Major scales and keys	<ol style="list-style-type: none"> <li>1. Identify tonic, dominant, half and whole steps in the major scale and apply to all major scales</li> <li>2. Notate circle of fifths and understand its use in determining key signatures</li> </ol>
March 28, 30, April 1  <b>(Monday, April 4, Test #7 on Intervals, Ch. #8)</b>	Intervals	<ol style="list-style-type: none"> <li>1. Recognize interval and scale degrees and the specific qualities of intervals: perfect, major, minor, diminished, augmented</li> <li>2. Write intervals above and below given notes</li> <li>3. Summarize common intervals</li> </ol>
April 8, 11, 13  <b>(Friday, April 15, Test #8 on Minor scales and keys, Ch. #7)</b>	Minor scales and keys	<ol style="list-style-type: none"> <li>1. Write the natural, harmonic, and melodic minor scales</li> <li>2. Notate key signatures for all minor scales</li> <li>3. Determine relative and parallel major and minor scales</li> <li>4. Recognize the dominant in minor</li> </ol>
April 25, 27, 29	Triads	<ol style="list-style-type: none"> <li>1. Distinguish between harmony, chords, triads</li> <li>2. Write major, minor, diminished, augmented triads</li> <li>3. Recognize popular-music chord symbols</li> <li>4. Learn simple and expanded positions of triads</li> </ol>

		5. Identify inversions of triads
<b>FINAL EXAM</b> Friday., May 6, 8:00 - 11:00 AM		<b>Test 9 on Triads and Dominant Seventh Chords</b>

**Out-of-Class Assignments:**  
from Gary C. White, *Music First*, 6th ed.

Date	Reading Assignments	Out-of-Class Assignment Due
Jan 10- Intro	-----	-----
Jan 12	Chapter 1	1.1a, 1.1b, 1.2a, 1.2b
Jan 14 - Pre-Test	Chapter 1	1.3a, 1.3b, 1.4
Jan 19 - Test Ch 1	Chapter 1	-----
Jan 21	PIANO LAB	-----
Jan 24	Chapter 2	-----
Jan 26	Chapter 2	2.1
Jan 28 - Pre-Test	Chapter 2	2.2a, 2.2b, 2.3a
Jan 31 - Test Ch2	Chapter 2	-----
Feb 2	PIANO LAB	-----
Feb 4	Chapter 3	-----
Feb 7	Chapter 3	3.1, 3.2a
Feb 9- Pre-Test	Chapter 3	3.3, Handout
Feb 11 - Test Ch3	Chapter 3	-----
Feb 14	PIANO LAB	-----
Feb 16	Chapter 5	-----
Feb 18 - Pre-Test	Chapter 5	5.1, 5.2a, 5.2b
Feb 21- Test Ch 5	Chapter 5	-----
Feb 23	PIANO LAB	-----
Feb 25	Chapter 4	-----
Feb 28	Chapter 4	4.1a, 4.1b, 4.2b
Mar 2 - Pre-Test	Chapter 4	4.3a, Handout
Mar 4- Test Ch 4	Chapter 4	-----
Mar 14	PIANO LAB	-----
Mar 16	Chapter 6	-----
Mar 18	Chapter 6	6.1b
Mar 21 - Pre-Test	Chapter 6	6.2a, 6.2b, 6.3a, 6.3b
Mar 23 - Test Ch6	Chapter 6	-----
Mar 25	PIANO LAB	-----
Mar 28	Chapter 8	-----
Mar 30	Chapter 8	8.1a, 8.1b,
Apr 1 - Pre-Test	Chapter 8	8.2a, 8.2b, 8.3a, 8.3b
Apr 4 - Test Ch 8	Chapter 8	-----
Apr 6	PIANO LAB	-----
Apr 8	Chapter 7	-----
Apr 11	Chapter 7	Handout,
Apr 13 - Pre-Test	Chapter 7	7.2a, 7.2b, 8.3
Apr 15 - Test Ch 7	Chapter 7	-----
Apr 18	PIANO LAB	-----
Apr 20	PIANO LAB	-----
Apr 25	Chapter 9	-----
Apr 27	Chapter 9	9.2a, 9.2b
Apr 29 - Pre-Test	Chapter 9	9.3b, Handout
May 6 - Final Ch 9	Chapter 9	8:00 - 11:00 am

**PIANO LAB ASSIGNMENTS (To be completed at the student's own pace -- 10% of Final Grade)**

1. Page #7
2. Page #9
3. Page #11
4. Page #13
5. Page #15
6. Page #17
7. Page #21
8. Pages #22 and 23
9. Pages #25, 28 and 29
10. Pages #30 and 31

**MUS 210: History of Rock: 1950s-1970s.  
Summer 2016**

Room: Broughton, 1402 (no food is permitted in this room; beverages must be capped and containers discarded)  
Meeting time: T/H 11:45-1:00  
Instructor: Dr. Tom Koch (“Coke”)  
Office: Broughton Hall 2412  
Office Phone: (919) 515-0149  
Email: tom\_koch@ncsu.edu  
Office Hours: Tuesdays 10:00-11:00, or by appointment  
Credits: 3

**Course Description:** This course examines the stylistic evolution and cultural impact of rock music from the birth of rock & roll in the 1950s to the mainstream and alternative rock trends of the late 1970s. Emphasis is placed on the contributions of major artists, commercial and critical reception of the music, the role of instrumentation and arrangement, and changes in recording and communication technology. Students may be required to provide their own transportation to and cover the cost of an on- or off-campus event. This course fulfills GEP requirements in Visual and Performing Arts.

**GEP Student Learning Outcomes and Means of Assessment for Visual and Performing Arts**

**1. Deepen understanding of aesthetic, cultural, and historical dimensions of artistic traditions:**

**Student Learning Outcomes:** Students will explain specific aesthetic, cultural and historical contexts of popular music, such as (1) political and economic circumstances that influenced and, in turn, were influenced by musical production, (2) distinctions among African American and European American musical traditions, (3) roles of sexual, gender, and generational identity in the commercialization of rock, and (4) the changing effects of technology and commercialism on the dissemination of rock.

**Means of Assessment:** Students will take two tests. Sample essay question: Discuss the ways in which the album *Sgt. Pepper's* broke new ground in the following areas: musical style, recording technology, instrumental timbre, cultural (and countercultural) reference, and the artistic inspiration of the concept album.

**2. Strengthen their ability to interpret and make critical judgments about the arts through the analysis of structure, form, and style of specific works:**

**Student Learning Outcomes:** Students will identify the variety of meanings a popular song may communicate based on an analysis of the musical elements, including melody, harmony, rhythm, timbre, texture, form, genre, and lyrics.

**Means of Assessment:** Students will write an essay that compares the music of their two favorite bands; part of the essay will involve examining songs with respect to musical style, subject matter,



and contemporaneous historical, cultural, and political events in order to identify meanings, both explicit and implicit

### 3. Strengthen their ability to create, recreate, or evaluate art based upon techniques and standards appropriate to the genre:

**Student Learning Outcomes:** Students will develop critical listening skills that enable them to distinguish the ways composers and performers organize musical elements to create a work that is coherent and unified.

**Means of Assessment:** Students will engage in numerous listening activities (including listening to and discussing songs in class, listening tests, and written evaluation of a live concert) that require them to articulate the coherence and unity of a song's structure based on the use and organization of musical elements

#### **Required materials:**

Covach, John and Andrew Flory, *What's That Sound? An Introduction to Rock and Its History*, 4<sup>th</sup> ed. (Norton, 2015). ISBN: 978-0393937251. \$62.00 @ Amazon.

Students must have access to the Internet. In order to discourage extracurricular use of electronic devices during class, electronic devices (laptops, tablets, phones, etc.) may not be used during class unless specified by the instructor. Notes should be taken by hand.

Textbook website (Norton): <http://books.wwnorton.com/books/webad.aspx?id=4294985628>

**Course Expenses:** Students may be required to cover the cost of an off-campus event (e.g., rock performance) and to provide their own transportation.

**Attendance Policy:** Attendance is mandatory and is taken at each class. **IF YOU DO NOT ACKNOWLEDGE YOUR PRESENCE WHEN ROLL IS CALLED, YOU WILL BE MARKED ABSENT.** <http://policies.ncsu.edu/regulation/reg-02-20-03>

- Two (2) absences are permitted for any reason (whether excused or unexcused, emergency or non-emergency) without penalty in the cumulative course grade, with the following exception:
  - **If you are absent on the day of a test**, you must email me within 24 hours about the nature of the absence (out of fairness to the rest of the class, do NOT wait until the subsequent class to let me know of your absence or it will be too late for a make-up). Together we will coordinate a time for a make-up test. Unless otherwise warranted, make-up tests must be taken within two days of the absence and must be accompanied by official documentation of absence. Test grades will only be validated pending official documentation of absence. Only emergency or pre-approved absences on the day of a test will be accepted in order for a make-up test to be validated (emergency absences constitute death or serious injury in the family, serious illness or injury of the student, and court appearances, as allowed by university policy)
- Upon your 3<sup>rd</sup> and each subsequent absence, you must provide official documentation to me by the subsequent class in order to avoid the penalties outlined below (see "Class

Attendance"). **NOTE:** EACH absence beyond 3 must be accompanied by its own documentation; for instance, if you are absent on Monday and again two days later on Wednesday, I will require one document with Monday's date and another document with Wednesday's date.

- If you realize within the first week of class that (1) the anticipated number of absences will exceed the number of excused absences permitted in the course, or (2) your schedule necessitates regular tardiness or early dismissals, you should discuss the situation with me right away.
- Two (2) tardies of 5 or more minutes will result in one (1) absence.
- Each instance of behavioral disturbance, sleeping in class, cell phone usage, texting, eating, or other extracurricular activity will result in one absence. Laptops are not permitted to be used in class; notes should be taken by hand.

**Adverse weather policy:** If classes are cancelled due to adverse weather conditions, the university will announce this on the school website. As long as the university remains open and classes meet as scheduled, attendance is taken and your presence is expected.

**Extra Credit Policy:** This course makes no allowances for extra credit (please don't ask). Your final grade is the result of tests, assignments, and attendance. Please make an appointment with me long before a test if you are having trouble with the content.

**Grading:** Course grading will be assessed by means of (1) Attendance and Interview, (2) Band Comparison, (3) In-class Listening Quizzes, (4) Online Textbook Quizzes

- **Attendance and Interview:** You will attend a live popular music (music specifically marketed for the youth) music concert or club event and interview someone involved in the band or production team. The interview can be live, email, or phone. Start this project early in the semester by finding out what and where concerts are happening, gaining permission from the band or its agent for an interview, investigating the band and its music, and preparing relevant questions. Your final project should provide an account of (1) your concert experience (when did you attend, what did they play, discuss the musical style), (2) historical and stylistic survey of the band (be an informed interviewer before you interview by digging into this group to learn their songs and style), (3) interview questions and responses (how was the interview set up and how was it conducted?), (4) reflections or conclusions you draw from these responses (what were the "a-ha" moments for you as a rock student or moments of deeper insight into the business?). You can work either individually or in pairs (no more than 2), but if in pairs, the same grade will be assigned to both students. Assignments submitted after the announced deadline will be deducted an additional 10% per day up to 4 days, after which they will not be accepted and the student will receive 0%. Sample questions include:
  - How long have you been performing?
  - How would you identify/label your musical style?
  - What style of music do you enjoy performing the most?
  - Who are your musical and non-musical influences?
  - Who writes your songs and how does the songwriting process work?
  - How do you market yourself and in what venues to you usually play?

- What's your perspective on the recording industry today?
  - I notice that in X song, (for instance) the harmony changes in the 3<sup>rd</sup> verse Can you tell me what prompted that change?
  - What advice do you have for a budding musician entering the business?
- **Band Comparison Paper:** You will write a 5-7-page paper that compares and contrasts your two (2) favorite bands or artists. Assignments submitted after the announced deadline will be deducted an additional 10% per day up to 4 days, after which they will not be accepted and the student will receive 0%. The paper should
    - Explain why you selected these particular bands or artists: provide a brief background of the groups and your attraction to them.
    - Compare/contrast the musical aesthetic (artistic philosophy) and musical style with reference to selected works.
    - Incorporate musical vocabulary to the best of your ability
- **In-class Listening Quizzes:** Twice during the semester there will be a quiz on the songs we listen to and analyze in class. Most of the songs will come from your textbook, and I will give you the links. You will be asked to discuss the following:
    - Title and artist
    - Historical context
    - Musical style
    - Importance and influence of the song and artist
- **Online textbook Quizzes:** In order to facilitate class discussion, there are reading assignments for every lesson. Each assignment will be accompanied by a Moodle multiple-choice quiz (<https://wolfware.ncsu.edu/courses/my-wolfware/>), which must be completed by a specified date. All quizzes are open book, but have a 30-minute time limit and must be taken individually; under no circumstances should you collaborate on quizzes. Quizzes will remain open until 11:00 AM on the due day. Any quiz that is not submitted will receive 0%. **IT IS UP TO EACH STUDENT TO CHECK THE MOODLE SITE EVERY DAY TO SEE IF THERE IS A QUIZ DUE!** If you experience technical issues with the Moodle site, notify the Moodle staff at 513-7094 or [http://delta.ncsu.edu/get\\_help/learntech/](http://delta.ncsu.edu/get_help/learntech/). I will be unable to correct any problems you encounter with Moodle.
- **Class Attendance:** Two (2) absences are allowed without documentation and penalty. The following scale will be used to determine your semester grade as it relates to an excess of the allowable number of absences:
    - **1-2 absences** = no reduction in the cumulative course grade
    - **3-4 absences** = reduction of **5 percentage points** in the cumulative course grade
    - **5-6 absences** = reduction of **10 percentage points** in the cumulative course grade
    - **7-8 absences** = reduction of **20 percentage points** in the cumulative course grade
    - **9+ absences** = reduction of **40 percentage points** in the cumulative course grade

**Grade weight:**

35% Concert Attendance and Interview

25% Listening quizzes

20% Band Comparison Paper  
20% Online Textbook Quizzes

**Grading Scale:** Letter grades will be awarded on the following scale:

A+ 100 – 97.00	B+ 89.99 – 87.00	C+ 79.99 – 77.00	D+ 69.99 – 67.00
A 96.99 – 93.00	B 86.99 – 83.00	C 76.99 – 73.00	D 66.99 – 63.00
A- 92.99– 90.00	B- 82.99– 80.00	C- 72.99 – 70.00	D- 62.99– 60.00

**Transportation:** This course requires students to provide their own transportation to an off-campus event.

**Incomplete grade:** An “incomplete” is a temporary grade, given as a result of documented serious event. An IN is only appropriate when the student's record in the course is such that the successful completion of course expectations missed as a result of a documented serious event would enable that student to pass the course. <http://policies.ncsu.edu/regulation/reg-02-50-03>

**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>

**For Students with 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 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://policies.ncsu.edu/policy/pol-04-25-05> or [http://www.ncsu.edu/equal\\_op/](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 Outline

- Week 1: Introduction: Studying Rock (Covach, Introduction)
- Week 2: Roots–1955, The World before Rock and Roll (Covach, chapter 1)
- Week 3-4: 1955–1960, The Birth and First Flourishing of Rock and Roll (Covach, chapter 2)
- Week 5: 1959–1963, The Demise of Rock and Roll and the Promise of Soul (Covach, chapter 3)
- Week 6-7: 1964–1966, The Beatles and the British Invasion (Covach, chapter 4)
- Week 8: 1964–1966, American Responses (Covach, chapter 5)
- Listening Quiz #1**
- Week 9: 1960–1970, Motown Pop and Southern Soul (Covach, chapter 6)
- Week 10-11: 1966–1969, Psychedelia (Covach, chapter 7)
- Week 12-13: 1970–1975, The Growing Rock Monster (Covach, chapter 8)
- Band Comparison Paper due**
- Week 14: 1970–1980, Black Pop, Reggae, and the Rise of Disco (Covach, chapter 9)
- Week 15: 1975–1980, Mainstream Rock, Punk, and New Wave (Covach, chapter 10)
- Week 16: Dec 3 (Thu): **Listening Quiz #2**  
Dec 8 (Tue): **Interview due**

**MUS 211: History of Rock II: 1980s-present**  
**Fall 2016**

Room: TBD  
Meeting time: TBD  
Instructor: Dr. Tom Koch (“Coke”)  
Office: Broughton 2412  
Office Phone: 5-0149  
Email: tdkoch@ncsu.edu  
Office Hours: TBD  
Credits: 3

**Course Description:** The course examines the stylistic development and cultural impact of popular music from the 1980s to the present. Emphasis is placed on the contributions of major artists, commercial and critical reception of the music, the role of instrumentation and arrangement, and changes in recording and communication technology. Students may be required to provide their own transportation to and cover the cost of an on- or off-campus event. This course fulfills GEP requirements in Visual and Performing Arts.

**Visual and Performing Arts: Statement of GEP Student Learning Outcomes correlated with GEP Objectives**

**1. Deepen understanding of aesthetic, cultural, and historical dimensions of artistic traditions:**

**Student Learning Outcomes:** Students will explain specific aesthetic, cultural and historical contexts of popular music, such as (1) political and economic circumstances that influenced and, in turn, were influenced by musical production, (2) distinctions among African American and European American musical traditions, (3) roles of sexual, gender, and generational identity in the commercialization of rock, and (4) the changing effects of technology and commercialism on the dissemination of rock.

**Means of Assessment:** Students will take two tests. Sample question: How did female performers impact the American mainstream in the new millennium? What different perspectives did they show in their music, lyrics, and appearance? How dramatically were these roles different from previous eras in the history of rock music?

**2. Strengthen their ability to interpret and make critical judgments about the arts through the analysis of structure, form, and style of specific works;**

**Student Learning Outcomes:** Through listening and discussion of selected works, students will articulate the variety of meanings a song may communicate based on an analysis of the musical elements, including melody, harmony, rhythm, timbre, texture, form, genre, and lyrics

**Means of Assessment:** Students will write an essay that compares the music of their two favorite bands; part of the essay will involve examining songs with respect to musical style, subject matter, and contemporaneous historical, cultural, and political events in order to identify meanings, both explicit and implicit

**3. Strengthen their ability to create, recreate, or evaluate art based upon techniques and standards appropriate to the genre.**

**Student Learning Outcomes:** Students will develop critical listening skills that enable them to distinguish the ways composers and performers organize musical elements to create a work that is coherent and unified.

**Means of Assessment:** Students will engage in numerous listening activities (including listening to and discussing songs in class, listening tests, and a written evaluation of a live concert) that require them to articulate the coherence and unity of a song's structure based on the use and organization of musical elements

**Required materials:**

Covach, John and Andrew Flory, *What's That Sound? An Introduction to Rock and Its History*, 4<sup>th</sup> ed. (Norton, 2015). ISBN: 978-0393937251. \$67.00 @ Amazon.

Students must have access to the Internet. In order to discourage extracurricular use of electronic devices during class, electronic devices (laptops, tablets, phones, etc.) may not be used during class unless specified by the instructor. Notes should be taken by hand.

Textbook website (Norton): <http://books.wwnorton.com/books/webad.aspx?id=4294985628>

**Transportation and Course Expenses:** Students may be required to cover the cost of an on- or off-campus event and to provide their own transportation.

**Attendance Policy:** Attendance is mandatory and is taken at each class. **IF YOU DO NOT ACKNOWLEDGE YOUR PRESENCE WHEN ROLL IS CALLED, YOU WILL BE MARKED ABSENT.** <http://policies.ncsu.edu/regulation/reg-02-20-03>

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  - **If you are absent on the day of a test**, you must email me within 24 hours about the nature of the absence (out of fairness to the rest of the class, do NOT wait until the subsequent class to let me know of your absence or it will be too late for a make-up). Together we will coordinate a time for a make-up test. Unless otherwise warranted, make-up tests must be taken within two days of the absence and must be accompanied by official documentation of absence. Test grades will only be validated pending official documentation of absence. Only emergency or pre-approved absences on the day of a test will be accepted in order for a make-up test to be validated (emergency absences constitute death or serious injury in the family, serious illness or injury of the student, and court appearances, as allowed by university policy)
- Upon your 3<sup>rd</sup> and each subsequent absence, you must provide official documentation to me by the subsequent class in order to avoid the penalties outlined below (see "Class Attendance"). **NOTE:** EACH absence beyond 3 must be accompanied by its own documentation; for instance, if you are absent on Monday and again two days later on Wednesday, I will require one document with Monday's date and another document with Wednesday's date.

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**Extra Credit Policy:** This course makes no allowances for extra credit (please don't ask). Your final grade is the result of tests, assignments, and attendance. Please make an appointment with me long before a test if you are having trouble with the content.

**Grading:** Course grading will be assessed by means of (1) Attendance and Interview, (2) Band or Artist Comparison Paper, (3) In-class Listening Tests, (4) Online Textbook Quizzes

- **Attendance and Interview:** You will attend a live popular music (music specifically marketed for the youth) music concert or club event and interview someone involved in the band or production team. The interview can be live, email, or phone. Start this project early in the semester by finding out what and where concerts are happening, gaining permission from the band or its agent for an interview, investigating the band and its music, and preparing relevant questions. Your final project should provide an account of (1) your concert experience (when did you attend, what did they play, discuss the musical style), (2) historical and stylistic survey of the band (be an informed interviewer before you interview by digging into this group to learn their songs and style), (3) interview questions and responses (how was the interview set up and how was it conducted?), (4) reflections or conclusions you draw from these responses (what were the "aha" moments for you as a rock student or moments of deeper insight into the business?). You can work either individually or in pairs (no more than 2), but if in pairs, the same grade will be assigned to both students. Assignments submitted after the announced deadline will be deducted an additional 10% per day up to 4 days, after which they will not be accepted and the student will receive 0%. Sample questions may include:
  - How long have you been performing?
  - How would you identify/label your musical style?
  - What style of music do you enjoy performing the most?
  - Who are your musical and non-musical influences?
  - Who writes your songs and how does the songwriting process work?
  - How do you market yourself and in what venues to you usually play?
  - What's your perspective on the recording industry today?
  - I notice that in X song, (for instance) the harmony changes in the 3<sup>rd</sup> verse Can you tell me what prompted that change?
  - What advice do you have for a budding musician entering the business?



- **Band or Artist Comparison Paper:** You will write a 5-7-page paper that compares and contrasts your two (2) favorite bands or artists. Assignments submitted after the announced deadline will be deducted an additional 10% per day up to 4 days, after which they will not be accepted and the student will receive 0%. The paper should
  - Explain why you selected these particular bands or artists: provide a brief background of the groups and your attraction to them.
  - Compare/contrast the musical aesthetic (artistic philosophy) and musical style with reference to selected works.
  - Incorporate musical vocabulary to the best of your ability
- **In-class Listening Tests:** Twice during the semester there will be a test on the songs we listen to and analyze in class. Most of the songs will come from your textbook, and I will give you the links. You will be asked to discuss the following:
  - Title and artist
  - Historical context
  - Musical style
  - Importance and influence of the song and artist
- **Online textbook Quizzes:** In order to facilitate class discussion, there are reading assignments for every lesson. Each assignment will be accompanied by a Moodle multiple-choice quiz (<https://wolfware.ncsu.edu/courses/my-wolfware/>), which must be completed by a specified date. All quizzes are open book, but have a 30-minute time limit and must be taken individually; under no circumstances should you collaborate on quizzes. Quizzes will remain open until 11:00 AM on the due day. Any quiz that is not submitted will receive 0%. **IT IS UP TO EACH STUDENT TO CHECK THE MOODLE SITE EVERY DAY TO SEE IF THERE IS A QUIZ DUE!** If you experience technical issues with the Moodle site, notify the Moodle staff at 513-7094 or [http://delta.ncsu.edu/get\\_help/learntech/](http://delta.ncsu.edu/get_help/learntech/). I will be unable to correct any problems you encounter with Moodle.
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  - **3-4 absences** = reduction of **5 percentage points** in the cumulative course grade
  - **5-6 absences** = reduction of **10 percentage points** in the cumulative course grade
  - **7-8 absences** = reduction of **20 percentage points** in the cumulative course grade
  - **9+ absences** = reduction of **40 percentage points** in the cumulative course grade

#### **Grade weight:**

35% Concert Attendance and Interview  
 25% Listening Tests  
 20% Band or Artist Comparison Paper  
 20% Online Textbook Quizzes

**Grading Scale:** Letter grades will be awarded on the following scale:

A+ 100 – 97.00	B+ 89.99 – 87.00	C+ 79.99 – 77.00	D+ 69.99 – 67.00
A 96.99 – 93.00	B 86.99 – 83.00	C 76.99 – 73.00	D 66.99 – 63.00
A- 92.99– 90.00	B- 82.99– 80.00	C- 72.99 – 70.00	D- 62.99– 60.00

**Incomplete grade:** An “incomplete” is a temporary grade, given as a result of documented serious event. An IN is only appropriate when the student's record in the course is such that the successful completion of course expectations missed as a result of a documented serious event would enable that student to pass the course. <http://policies.ncsu.edu/regulation/reg-02-50-03>

**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>

**For Students with 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 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://policies.ncsu.edu/policy/pol-04-25-05> or [http://www.ncsu.edu/equal\\_op/](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 Outline

Week 1-2: Covach, Chapter 10. 1975–1980, Mainstream Rock, Punk, and New Wave

Week 3-4: Covach, Chapter 11. 1980–1990, I Want My MTV

Week 5-7 Covach, Chapter 12. 1982–1989, Heavy Metal, Rap, and Indie

**October 5: Listening Test #1**

Week 8-10 Covach, Chapter 13. 1990–1999 Alternative Rock and Rock Alternatives  
**Oct 21: Band Comparison Paper due**

Week 11-12 Covach, Chapter 14. 1992–1999, Widening Gaps

Week 13-15 Covach, Chapter 15. 2000–present, Rock Traditions and the Business of Change

Week 16 **Dec 4: Interviews due**  
**Exam day: Listening Test #2**

**MUS 240: Introduction to Music Industry**  
**Fall 2016**  
**Broughton Hall - Room 1402**  
**Monday and Wednesday 11:45 - 1:00**

**Instructor:** Dr. Christopher Reali  
**Phone Number:** n/a  
**E-mail:** cmreali@ncsu.edu  
**Office:** Broughton Hall  
**Office Hours:** Monday 1:30 - 2:30 or by appointment

### **Course Description**

This course provides an introduction to the commercial music industry, including its history and development in the context of multiple popular and traditional genres in the United States. Introduction to the Music Industry will increase a student's understanding of common business practices and related knowledge concerning the music industry. It will also assist those students considering further study of the music industry to effectively maintain a professional music career. Students may be required to provide their own transportation to and cover the cost of on- and off-campus events.

### **Student Learning Outcomes for this Course**

By the end of the semester, students will be able to:

1. Discuss the history of the recorded music industry and articulate the difference between the record business and the music industry
2. Articulate how the music industry responded to radical technological and economic change
3. Discuss how the industry supports new artist models
4. Identify common press/promotion, advertising, publicity, digital retail distribution, touring, licensing and radio campaigns used in the industry
5. Compare and contrast the benefits and challenges of online music distribution and older retail models
6. Identify compositional techniques and production methods common to multiple musical genres and styles
7. Provide critical feedback on song writing and song production using musical and non-musical criteria

### **GEP Student Learning Outcomes and Means of Assessment for Visual and Performing Arts**

**Objective 1: Deepen understanding of aesthetic, cultural, and historical dimensions of artistic traditions:**

**Outcomes for Objective 1:** Students will articulate how the recorded music industry supports new artist models.

**Measure(s) for above Outcome:** Students will write a 2-page sketch of a producer of their choice, which should include relevant professional information such as: artists/band worked for; select tracks/albums produced; studios associated with; awards won; etc. They will listen to at least 3-5 tracks produced by this individual and endeavor to identify the producer's "signature" on these tracks.

**Objective 2: Strengthen their ability to interpret and make critical judgments about the arts through the analysis of structure, form, and style of specific works.**

**Outcome for Objective 2:** Students will identify compositional techniques and production methods common to multiple musical genres and styles.

**Measure(s) for above Outcome:** Students will select a song, either current or "classic," and provide a song form analysis similar to one demonstrated during class. They will use the song form chart for "Shake it Off" posted on Moodle as a template.

**Objective 3: Strengthen their ability to create, recreate, or evaluate art based upon techniques and standards appropriate to the genre.**

**Outcomes for Objective 3:** Students will write and perform their own compositions based on compositional methods discussed in class.

**Measure(s) for above Outcome:** Students will compose original lyrics on the topic of their choice to a 12-bar blues accompaniment. They will perform their songs and explain their compositional choices in class.

**Course Requirements:** There is no required textbook for this course. All readings are posted on the Moodle site.

- **Homework:** Please see page 8 for assignment instructions. Other information about homework is also posted on Moodle. Please see the **Course Schedule** (page 7) for due dates. All assignments must be typed. All assignments are due in **hardcopy (printed)**, unless indicated otherwise, at the start of class on their respective due date. **Late assignments will not be accepted. EVER.**
  - **Please Note:** Written communication is one of the most important skills for a career in the music industry. Your ability to write coherent proposals and summaries will be one of your most valuable assets in a career that may span multiple organizations and fields.
- **Attendance:** As per the University, "There is no University-wide definition of a reasonable number of permissible excused absences. The instructor, in lieu of a

University policy, is responsible for determining the acceptable number of excused absences in his/her class.” Per University regulations, excused absences must fall into one of two categories: sanctioned anticipated situations and documented emergency situations. Anticipated situations (e.g., participation in official University functions, court attendance, religious observances, or military duty) *must be submitted in writing at the beginning of the semester or one week prior to the anticipated absence*. Emergency absences (e.g., student illness, injury or death of immediate family member, *must be documented by the Student Organization Resource Center 515-3323*) within one week following the emergency. Please consult the following website for further information on University attendance regulations: <http://policies.ncsu.edu/regulation/reg-02-20-03>

- Class Attendance: One (1) absence is allowed for any reason and without documentation. Each successive undocumented absence will result in the course deductions outlined below.
  - 1 absence = no deduction in the cumulative course grade
  - 2-3 absences = deduction of 5 percentage points in the cumulative course grade
  - 4-5 absences = deduction of 10 percentage points in the cumulative course grade
  - 6-7 absences = deduction of 20 percentage points in the cumulative course grade
  - 8+ absences = deduction of 40 percentage points in the cumulative course grade
- Two (2) tardies of 5 or more minutes will result in one (1) absence.
- Each instance of behavioral disturbance, sleeping in class, completing outside homework, cell phone usage, texting, or other extracurricular activity will result in one absence.
- If a student is unable to be present for any tests or unable to complete an assignment due to a documented serious event, reasonable accommodations will be made to make up either the test or assignment as outlined in University Attendance Regulation REG 02.20.3:  
<http://policies.ncsu.edu/regulation/reg-02-20-3>
- **Class Participation:** Students are expected to be attentive during lectures, ask questions, contribute comments to class discussions and should come to each class having read the required assignment and prepared to discuss and comment upon the issues raised by the readings. (The reading schedule appears in the **Course Schedule** below). Students must come to each class having read the assigned readings and demonstrate their engagement by participating actively and thoughtfully in the in-class discussions.
  - Even though this is an introductory course, Dr. Reali treats the class like a seminar. This means that Dr. Reali and the students engage in formal, critical discussions of the daily topics.

- Student preparation for (and participation in) class will be evaluated using the following criteria and is worth 10% of the final grade:
  - A - Student is well prepared and participates actively; student is attentive, responds when called upon and volunteers often with pertinent questions and comments.
  - B - Student is usually prepared and always responds when called upon; student volunteers on occasion.
  - C - Student shows evidence of being unprepared; student has some trouble when called in and does not volunteer often.
  - D - Student is unprepared and/or inattentive; student never volunteers; student comes late to class or leaves early.
  - F - Student exhibits a lack of concern for the class; student sleeps in class; student behavior may have a negative effect on the class.
- **Tests:** There are 2 tests and a final (comprehensive) exam, worth 30% of the final grade.
- **Guest Speakers:**
  - In past semesters, this course has utilized the expertise of local, national, and internationally recognized music industry professionals, including producers, club owners, booking agents, entertainment attorneys, musicians, record label executives, and others. Many of these individuals have spoken to the class in person, but they have also spoken with the class via videoconference.
  - **Schedule for Guest Speakers:** - TBA (Because of the fluid nature of their work, it is often a challenge to confirm a date with these individuals in advance. Dr. Reali will let the class know as far ahead as possible before a guest confirms.)
  - **Assignments for Guest Speakers:** On the day of a guest speaker, each student will submit **at least two relevant questions** related to what the speaker does within the music industry. These questions **must be typed in advance** and they will be collected. The questions will count towards your participation grade.
  - **Any student observed by Dr. Reali sleeping or dozing off during a class with a guest speaker will be marked absent for that day and subject to the grade deductions outline above.**

### Final Grade Determination

2 Tests (Midterm-10%; Final-20%)	30%
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6 Homework Assignments	60%
Class Participation	10%
<b>Total</b>	<b>100%</b>

**This Course uses Standard NCSU Letter Grading:**

A+ 100-97	B+ 89.9-87	C+ 79.9-77	D+ 69.9-67
A 96.9-93	B 86.9-83	C 76.9-73	D 66.9-63
A- 92.9-90	B- 82.9-80	C- 72.9-70	D- 62.9-60

**A Few Course Policies:**

**Technology:**

- Dr. Reali allows the use of laptops for taking notes. However, please act like adults and don't check Facebook, send emails, etc. We're all adults so let common sense and respect both for me and your own education guide your use of technology. If it becomes necessary, I will revisit this open technology policy.

**Email:**

- When you correspond with Dr. Reali or any professor, keep in mind that you are not sending a text message or IM to your BFF.
- Include your name and the phrase "MUS 295" in the subject of every email you send.
- When corresponding with your professor, address them with the appropriate salutation: Dear Dr. Reali, or Hi Prof. Reali
  - Dr. Reali will not respond to any email that does not include an appropriate salutation.
- Include your name at the conclusion of every email.
- Dr. Reali will typically answer your email within 24 hours.
  - Do not expect Dr. Reali to answer any email sent to him after 7 pm until the following morning.
- Emails sent over the weekend (Friday 5pm through Sunday) might not be answered until Monday.

**Transportation:**

- Students may be required to provide their own transportation to and cover the cost of on- and off-campus events

**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)**

- Auditors must consult with the instructor. 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-02-50-03>

### **Academic Integrity**

- The instructor of this course fully expects students to complete all tests and assignments honestly. Students who violate University rules on academic integrity are subject to disciplinary penalties, including the possibility of failure in the course and /or dismissal from The University. Since such dishonesty harms the individual, all students, and the integrity of The University, policies on academic integrity will be strictly enforced.
- All students should be aware of the University's policy on academic integrity found in the Code of Student Conduct Policy (POL11.35.1): <http://policies.ncsu.edu/policy/pol-11-35-1>
- The Honor Pledge, "I have neither given nor received unauthorized aid on this test or assignment" will be signed on each test or assignment verifying that student have neither given nor received unauthorized aid.

### **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, 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>

## **Anti-Discrimination Statement**

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## **Class Evaluation Information**

- The evaluation process is very important to me. When the time comes, please fill out the class evaluation information to help me become a better teacher for future students. Online class evaluations will be available for students to complete during the last 2 weeks of the semester and become unavailable before finals begin. 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 not know how any one student responded to any question, and students will not know the ratings for any instructors.

## **Student Resources**

- Writing and Speaking Tutorial Services: <http://tutorial.ncsu.edu/wsts-undergrad>
- Academic Policies: <http://policies.ncsu.edu/>
- University Career Center: <http://bit.ly/Ublsgg>
- Adverse Weather: Read the class cancellations policy here: <http://bit.ly/UblzZf>  
Check email, news, the NCSU home page, or call 919-513-8888 for the latest information.

## Course Schedule

This schedule is subject to change at the instructor's discretion. Students will be notified in advance of any changes. All readings found on Moodle.

Week	Date	Due	Topic	Read
1	January 6		<b>W:</b> Intro to class, overview, syllabus review	
2	Jan 11 & 13		<b>M:</b> Theorizing the "Music Industry" <b>W:</b> Music Industry History; Setting the Stage	<b>M:</b> "Rethinking the Music Industry" <b>W:</b>
3	Jan 18 & 20		<b>M:</b> <b>No class</b> (MLK Holiday) <b>W:</b> Music Business System	<b>M:</b> <b>W:</b> "The Young Person's Guide..."
4	Jan 25 & 27		<b>M:</b> Songwriting I - Musical Elements & Analysis <b>W:</b> Songwriting II - Writing Songs	<b>M:</b> Covach, "Typical Form" <b>W:</b> "Songwriters on Songwriting"
5	February 1 & 3	<b>H1</b>	<b>M:</b> Songwriting III - Business of Songwriting <b>W:</b> Record Production I - History of Recorded Sound	<b>M:</b> See Moodle <b>W:</b> "Record Producer" from Wikipedia; "Why Aren't Women..."
6	Feb 8 & 10	<b>H2</b>	<b>M:</b> Record Production II - The Basics <b>W:</b> Record Production III - "Hands-on"	<b>M:</b> "How To Become a Producer" <b>W:</b> "Home Studio Handbook" (Skim)
7	Feb 15 & 17	<b>H3</b>	<b>M:</b> Record Production IV <b>W:</b> Concert Venues	<b>M:</b> Student Presentations <b>W:</b> TBA
8	Feb 22 & 24		<b>M:</b> Concert Production <b>W:</b> Management I	<b>M:</b> TBA <b>W:</b> "Now You Know..." Passman I
9	Feb 29 & March 2	<b>Test</b>	<b>M:</b> Management II <b>W:</b> <b>MIDTERM</b>	<b>M:</b> Passman II <b>W:</b>
10	March 7 & 9		<b>Spring Break</b>	
11	March 14 & 16		<b>M:</b> Record Labels <b>W:</b> Recording Contracts	<b>M:</b> TBA <b>W:</b> See Moodle
12	March 21 & 23		<b>M:</b> Music Publishing <b>W:</b> Copyright I	<b>M:</b> See Moodle <b>W:</b> "Copyright Basics" & "Advanced Copyright Concepts"
13	March 28 & 30	<b>H4</b>	<b>M:</b> Copyright II <b>W:</b> The Digital Age	<b>M:</b> "Blurred Lines"; "Music Plagiarism" <b>W:</b> See Moodle
14	April 4 & 6		<b>M:</b> Film: <i>Downloaded</i> <b>W:</b> Streaming	<b>M:</b> See Moodle <b>W:</b> See Moodle
15	April 11 & 13	<b>H5</b>	<b>M:</b> Record Distribution <b>W:</b> DIY I	<b>M:</b> TBA <b>W:</b> TBA
16	April 18 & 20	<b>H6</b>	<b>M:</b> DIY II <b>W:</b> Arts Administration	<b>M:</b> TBA <b>W:</b> TBA
17	April 25		<b>M:</b> Final Thoughts	<b>M:</b>
<b>Final Exam</b>	April 27		<b>W:</b> <b>Final Exam (8-11)</b>	

## Homework Assignments

### Assignment #1 (Song Analysis) - Due Wednesday, February 3 (10%)

- Select a song, either current or “classic,” and provide a song form analysis similar to what we did during class. Use the song form chart for “Shake it Off” posted on Moodle as a template. A blank song form chart is also available on Moodle.

### Assignment #2 (Write Your Own Blues Song) - Due Monday, February 10 (10%)

- See Moodle for assignment instructions

### Assignment #3 (Producers) - Due Wednesday, February 17 (15%)

- You have been assigned a producer to research.
  - Part I (10%)
    - Provide a two-page maximum professional sketch of your selected producer. This is not a biographical essay. Your sketch should include relevant professional information such as: artists/band worked for; select tracks/albums produced; studios associated with; awards won; etc... Be sure that you have listened to at least 3-5 tracks produced by this individual. If possible, can you identify the producer’s “signature” on these tracks?
  - Part II (5%)
    - You will briefly (3-5 minutes max) present your findings on this producer during class. This is not a “formal” presentation (no PowerPoint needed!). Be prepared to tell the class who this person is, and what significant contributions they have made to record production.

### Assignment # 4 (Publishers) - Due Monday, March 28 (5%)

1. Visit the website of the Music Publishers Association of the United States: <http://www.mpa.org/>
2. Click the “Directories” heading (on the left of the page), and then search for a music publisher in the “Directory of Music Publishers”
  - a. Select one music publisher
    - i. If you don’t know which publisher to pick, look at the publishing information for your favorite song and start there.
    - ii. Thoroughly explore the company website:
      1. If the company doesn’t have a website, pick another company!
    - iii. Read about the company’s history (if provided).
    - iv. What type(s) of music does the company publish?

1. Does the company have any imprints? (What's an imprint?)
- v. Does the company represent any composers?
  1. If so, provide a list of the composers (a partial list is OK if the company represents many people).
- b. What about the website impressed you?
3. Prepare a 500-word summary of your findings (including a brief history of the publishing company), and be prepared to discuss the company you researched and the MPA in class.

### **Assignment # 5 (Marketing) - Due Monday, April 11 (15%)**

1. Read the pages about Marketing posted on Moodle. Then select a relatively well-known music act and conduct an informal study of the ways in which they interact with the public. Using a SWOT analysis, assess the artists' marketing plan from the perspective of an outside observer.
  - a. Consider This:
    - i. How does the act connect to their fans?
      1. Review their website(s), which might also include Wikipedia
    - ii. How does the act utilize traditional and social media?
      1. Review their Facebook page, Twitter, Instagram, ReverbNation, etc...
      2. If the act is on tour and playing in the area, check the local papers for stories.
2. Summarize your findings in **300 words or less** by highlighting aspects of the marketing that you found either clever, creative, or both. You may also include aspects that you didn't find particularly useful.
  - a. Your summary must include examples of two (2) social media posts from the months of January, February, March, and April. (These posts will not be included in the word count.) Provide the direct quote/post, the date, and which site it is from.
3. Provide a **4 slide** PowerPoint or Keynote presentation that outlines your SWOT analysis
  - a. Email the PowerPoint or Keynote presentation to Dr. Reali
4. For this project, it may help if you consider this assignment from the perspective of someone working for a marketing company who is trying to attract clients. Although you are turning in a hard copy of your "report," be prepared to discuss your findings during class.

### **Assignment # 6 (Job Search) - Due Wednesday, April 20 (5%)**

- Read "Career Development" posted on Moodle in the Assignment #6 folder. Then find a help wanted ad for a music industry position or internship that you are reasonably well qualified for\* and write a cover letter for the position. Check local and international record label websites for job postings/internship opportunities, or look on sites such as Indeed.com for jobs. You will also submit

a résumé highlighting your qualifications for the position. See page 483 of the reading for guidelines. **On a separate sheet of paper, include either the wording for the advertised position or a printout of the ad.**

\* If the job description calls for a Senior Vice President or Head of Marketing, you're probably not qualified!

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**Re: Consult requested**

1 message

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**Andy Nowel** <nowel@ncsu.edu>

Wed, Jan 27, 2016 at 5:00 PM

To: Christopher Reali &lt;cmreali@ncsu.edu&gt;

Cc: Tom Koch &lt;tdkoch@ncsu.edu&gt;, "gdbeckma@ncsu.edu" &lt;gdbeckma@ncsu.edu&gt;, Andy Nowel &lt;nowel@ncsu.edu&gt;

Hi Tom, Chris:

Thanks for consulting with PCOM and for the explanation provided. There is no overlap with any content in our courses. We certainly endorse approval of this course coming forward. Interesting course.

Respectfully.

Andy Nowel

Andrew F Nowel  
Director of Curriculum, Scheduling, and Assessment  
Poole College of Management, NC State University.  
Campus Box 8614, Raleigh, NC 27695 - 2150 Nelson Hall

On Wed, Jan 27, 2016 at 2:47 PM, Christopher Reali <cmreali@ncsu.edu> wrote:

Dear Andy,

The two class days labeled management cover the following: personal managers, tour managers, and booking agents. I was a tour manager for many years before I entered academia, so much of the discussions for that particular topic come from my personal experience. In general, I draw readings for these days from Don Passman's book, *All You Need to Know about the Music Business*, and in particular the chapter's that refer to the artist's "team." Other readings are culled from sources I've collected from music industry websites such as Music Business Association, Sound on Sound, Digital Music News, etc...In the past, I have also brought in a guest who is a booking agent, so he speaks about his career.

The days on record production are straight forward: we discuss the role of the producer and what he or she does. Again, readings are drawn from a variety of sources such as Sound on Sound, Disc Makers, or Fader. I have also had a friend of mine who is a multi-platinum award producer speak to the class.

I divide the days on copyright into two parts: the first day we discuss the rights guaranteed by copyright, and the readings are drawn from Passman, and the Baskerville text, *Music Business Handbook* (this was the text I used until this semester). The second day on copyright we look very closely at the recent "Blurred Lines" court decision. The students read articles about the ruling from the NY Times, Musicology Now, and Variety. As with the other topics mentioned above, I have asked an music/entertainment attorney to come and speak to the class.

Please let me know if you have any other questions.

Best,

Chris

---

Christopher M. Reali, PhD  
Lecturer  
Music Department  
NC State University  
[cmreali@ncsu.edu](mailto:cmreali@ncsu.edu)

On Tue, Jan 26, 2016 at 11:44 AM, Andy Nowel <[nowel@ncsu.edu](mailto:nowel@ncsu.edu)> wrote:

Hi Tom,

Yes I do now remember that discussion. The weekly summary of topics mentions a Management I and Management II discussion. Can you please elaborate on those discussions and the text or articles used in conjunction with those discussions. Also can you please mention where you are drawing material from in regard to record production, and copyright info. Record production would be in our operations mgt area and copyright info in our bus law/regulatory environment area.

Thanks,

Andy

On Tue, Jan 26, 2016 at 10:56 AM, Tom Koch <[tdkoch@ncsu.edu](mailto:tdkoch@ncsu.edu)> wrote:

Hi Andy,

The suggestion for a PCOM consult was made when the course went through as a special topics. But if you don't see the need for one at this time, we're happy to proceed to the committees.

Thank you,  
Tom

On Mon, Jan 25, 2016 at 5:20 PM, Andy Nowel <[nowel@ncsu.edu](mailto:nowel@ncsu.edu)> wrote:

Hi Tom,

Thanks for sending this our way. Please let me ask though if there is a specific reason to consult with PCOM on this course?

Andy



**MUS 270:001/002: Songwriting using Digital Audio Workstations  
Fall 2016**

**Course Description:**

A class specifically for songwriters, musicians, beat makers, sample manipulators and scratch artists using digital audio workstations (DAWs) as composition tools. This course will also introduce basic audio engineering, gain structure, and signal flow from interface to DAW. The goal is to explore the broader DAW platform as a tool in the songwriting process. Students will explore editing, looping, effects, equalization, plugins and rack hardware. No specific prior mathematics, engineering, or computer training required. Students may be asked to provide their own transportation to and cover the cost of an on- or off-campus event.

Instructor: Aaron Keane, adjunct professor

Course format: Studio = 3 hours/week

Credits: 2

Prerequisites: None

Class time and location:

- Section 001: M/W 11:45-1:00 Price Music Center, 110; Hunt Library, 4<sup>th</sup> floor digital music labs
- Section 002: M/W 1:30-2:45 Price Music Center, 110; Hunt Library, 4<sup>th</sup> floor digital music labs

GEP category: Visual and Performing Arts

Safety issues: None

**Course objectives:** By the end of the semester, the student will:

1. Successfully operate, maintain and use a DAW
2. Demonstrate familiarity with rudimentary song structures and sampling
3. Execute basic editing commands and file conversions
4. Use poetic meter as a primary component in text underlay
5. Apply rudimentary music theory to create basic chord progressions
6. Create audio recordings of student compositions using the digital, analog, and MIDI inputs of hardware interfaces
7. Identify and manipulate separated and captured regions and memory locations
8. Explain basic engineering, microphone types, polar patterns and microphone techniques.

**GEP Student Learning Outcomes and Means of Assessment for Visual and Performing Arts**

1. **Deepen understanding of aesthetic, cultural, and historical dimensions of artistic traditions:**

**Student Learning Outcomes:** Students will articulate the historical development of digital audio technology while successfully operating and maintaining DAWs.

**Measure for above Outcomes:** During class, students will discuss reading assignments on the development of digital audio technology, results of lab activities, personal experiences, and current events related to songwriting with DAWs, and will complete group and individual DAW activities corresponding to the subjects covered in weekly lectures and presentations.

**2. Strengthen their ability to interpret and make critical judgments about the arts through the analysis of structure, form, and style of specific works;**

**Student Learning Outcomes:** Students will discuss the validity of and demonstrate the uses of traditional compositional techniques in digital music composition, such as song forms, chord structures, and text underlay.

**Measure for above Outcomes:** Students will explain how traditional compositional techniques are used to provide coherence and unity to musical compositions and apply these techniques to their own works in lab activities, homework assignments, and individual projects.

**3. Strengthen their ability to create, recreate, or evaluate art based upon techniques and standards appropriate to the genre.**

**Student Learning Outcomes:** Students will create audio recordings of their own compositions using the digital, analog and MIDI inputs of hardware interfaces.

**Measure for above Outcomes:** Students will produce several independent recording and editing projects using their newly composed songs on DAW software. Independent projects will entail the writing, recording, and digital manipulation of their own compositions.

**Materials:**

- Required textbooks:
  - Bartlett, Bruce and Jenny Bartlett (2012). Practical Recording Techniques, 6th edition. Burlington, MA: Focal Press (\$39.23 at Amazon)
  - Simos, Mark. Songwriting Strategies: A 360-Degree Approach. Boston, MA: Berklee Press, 2014. (\$16.75 at Amazon)
  - Goodman, John C. Poetry: Tools and Techniques. Toronto, CA: Gniess Press, 2011. (\$8.99 at Amazon)
- Storage media External hard drive (USB, 500 gigs recommended, but whatever you have should work)

**Grading:** Students will complete lab exercises, short homework assignments, a series of independent projects, a midterm exam, and a final portfolio for presentation at the end of the semester. Participation in class activities and discussions is essential. Detailed assignment instructions and grading criteria will be posted on Moodle.

*Class discussion & participation.* Class discussions will be based on reading assignments, lab activities, student experiences, and current events related to songwriting on DAWs. Students should come to class prepared, having done the assigned reading and ready to ask or answer reasonable questions. Students are encouraged to pursue readings outside those that are assigned.

*Lab exercises.* Each week, students will participate in hands-on activities related to subjects covered in the weekly lectures and presentations. Assessment is pass/fail, based on participation.

*Homework.* Students will demonstrate their skills and mastery of key concepts through short homework assignments to be done outside of class. These assignments will generally relate to a single Songwriting / DAW concept or task. Due dates will be announced in class.

*Independent projects.* Students will produce several independent recording and editing projects using their newly composed songs on DAW software. Projects will include writing, recording, and digitally manipulating student compositions. Due dates will be announced in class.

*Midterm exam.* Students will archive all of their projects up to this point and begin constructing a portfolio.

*Final exam (= portfolio presentation).* Students will prepare examples of their work for inclusion in an online portfolio. This portfolio will be presented to the class at the final exam period, and will be subject to peer evaluation. Details and instructions will be discussed in class.

**Grade weight:**

Class discussion & Participation 20%

Homework 20%

Independent Projects (i.e.: portfolio creation) 30%

Midterm 20%

Final exam (= portfolio presentation) 10%

**Late work:** Late work will be accepted up to 2 days after the due date with a reduction of one letter grade. Students who are absent on the due day must provide official documentation of their absence and submit the assignment within 2 days to avoid a reduction of one letter grade. After 2 days, the assignment will no longer be accepted.

**Attendance:** Students may miss one class for any reason (excused or unexcused). Upon their second and each subsequent absence, students must submit official documentation within two days to avoid the penalties below. The following scale will be used to determine the semester grade as it relates to an excess in the allowable number of absences:

- **1 absence** = no reduction in the cumulative course grade
- **2 absences** = reduction of **10%** in the cumulative course grade
- **3 absences** = reduction of **20%** in the cumulative course grade
- **4 absences** = reduction of **30%** in the cumulative course grade
- **5+ absences** = reduction of **40%** in the cumulative course grade

**Grading Scale:** Letter grades will be awarded on the following scale:

A+ 100 – 97.00	B+ 89.99 – 87.00	C+ 79.99 – 77.00	D+ 69.99 – 67.00
A 96.99 – 93.00	B 86.99 – 83.00	C 76.99 – 73.00	D 66.99 – 63.00
A- 92.99– 90.00	B- 82.99– 80.00	C- 72.99 – 70.00	D- 62.99– 60.00

**Electronic 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.”

**Transportation:** Students may be asked to provide their own transportation to and cover the cost of an on- or off-campus event.

**Incomplete grade:** An “incomplete” is a temporary grade, given as a result of documented serious event. An IN is only appropriate when the student's record in the course is such that the successful completion of course expectations missed as a result of a documented serious event would enable that student to pass the course.

<http://policies.ncsu.edu/regulation/reg-02-50-03>

**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>

**For Students with 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 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://policies.ncsu.edu/policy/pol-04-25-05> or [http://www.ncsu.edu/equal\\_op/](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 Calendar:** Detailed reading assignments, lab exercise, homework, project descriptions, due dates, external links, and additional notes will be available on the course web site via Moodle. The following is a broad outline of the topics to be covered week-by-week during the semester. **Note that our labs meet at the Hunt Library on the last class period of the week.**

- **Week 1: Intro**
- M - Syllabus, DAW and Sound Basics, Learning to Listen
- W - Tour of Studios, Ableton Session Setup and User Interface
- **Week 2: MIDI, Music Theory, Considering the Audience**
- M - MIDI, Basic song forms and analysis
- W - Using MIDI and MIDI Editing Tools
- **Week 3: Rudimentary Music Theory and Application to DAWs**
- M - chord progressions, diatonic keys, basic time signatures
- W - Click tracks, tempos, time signatures, regions, memory markers
- **Week 4: Engineering and Signal Flow Basics**
- M - Interfaces, Routing, Cables, Mics and Polar Patterns
- W - Recording Audio (Ableton) and Practical Micing
- **Week 5 - Mixing pt. 1 (Basic Mixing)**
- M - Effects, Plugins, Mixing
- W - Creating Layers and Mixing with Effects
- **Week 6: Mixing pt. 2 (Advanced Mixing)**
- M - Grouping, Submixes, Aux Tracks, Automation

- W - Practical Application of Groups, Aux Tracks
- **Midterm Exam**
- **Week 7 - Pro Tools/Logic X Session Setup**
- M - Pro Tools/Logic Setups (Option)
- W - Building Session and experimenting in chosen DAW
- **Week 9 : Incorporating Voice and Lyrics**
- M - Poetic form and analysis
- W - Recording Voice (Vocal and Voice Over)
- **Week 10: Manipulating Audio and Song Structure**
- M - Progressive Music, Using Time Signature/Changing Tempos, Longer Compositions
- W - Digital Sample Manipulation, Elastic/Flex Audio, Beat Mapping
- **Week 11: Process and Product**
- M - Inspiration, Pre Production, "Process", and Finishing
- W - Compressing a Mix and Bouncing; file conversion and formats, Pro Tools
- **Week 12 - Considering the Medium, Third Party Plugins**
- M - Songwriting for Film/Theatre/Video Games
- W - Songwriting for Film, following action
- **Week 13 - Synergy**
- M - Marketing/Promoting Your Music
- W - Ableton and Pro Tools /Logic Synergy (Rewire)
- **Week 14 - Home Studio**
- M - All About Building Your DAW Studio
- W - Work on Portfolio Presentations
- **Week 15 - Final exam** (= portfolio presentations)

NC STATE UNIVERSITY

Office of the Dean  
Campus Box 8101  
Raleigh, NC 27695-8107

919.515-2468  
919.515-9419 (fax)

## Memorandum

Date: March 10, 2016

To: Dr. Tom Koch, Head of the Music Department

From: Dr. Deanna Dannels, Associate Dean of Academic Affairs  
Dr. Karen Young, Assistant Dean of Academic Affairs

RE: Course Consult for Songwriting Using Digital Audio Workstations

Multiple departments/units within the college of Humanities and Social Sciences have been contacted in response to the Music Department's request for a consultation on the proposal for a new course on Songwriting Using Digital Audio Workstations. Although there was some positive support for the course, the college has several reservations about the course and its inclusion in the catalog.

Positive or Neutral Support - Members of the creative writing program felt that the course could promote the creative process and had no concerns about overlap with existing courses in the catalog. Members of the communication media program indicated that there was some overlap with the audio production courses in that this course uses digital audio workstations as the basis for all that it does, but due to the differences in the courses' purpose/mission, they are not concerned about such duplication. It is thought that this course compliments what is done in Communication Media rather than replicates it and could enhance students' technical skills with its use of some tools that go beyond the means of existing COM courses such as COM 307.

Concerns/Opposition for Permanent Course Creation –The course has significant overlap with ARS/MUS 306, which is already offered every semester. Therefore, the rationale for adding this new course would be important to provide. In the absence of a highly compelling case for such duplication, it appears to be a serious and costly redundancy that should be avoided. Members of our Arts Studies Program have expressed concerns about the apparent level of rigor associated with the course. There are concerns that the course is lacking the level of artistic demands that would be expected in a university-level music/arts course in that, based on the read of the syllabus, students are not asked to engage with great, serious, or significant musical material.

---

**Fwd: Consultation for MUS**

1 message

**Barbara Kirby** <kirby@ncsu.edu>

Wed, Mar 30, 2016 at 10:53 AM

To: Li Marcus &lt;lamarcus@ncsu.edu&gt;, Sarah Howard &lt;svhoward@ncsu.edu&gt;

Here is the consult from CHASS. Please add to the agenda for MUS 270.

----- Forwarded message -----

From: **Deanna Dannels** <dpdannel@ncsu.edu>

Date: Wed, Mar 30, 2016 at 10:04 AM

Subject: Re: Consultation for MUS

To: Tom Koch &lt;tdkoch@ncsu.edu&gt;

Cc: Barbara Kirby &lt;kirby@ncsu.edu&gt;, Michael Mullen &lt;mdmullen@ncsu.edu&gt;, Karen Young &lt;kryoung@ncsu.edu&gt;, "gdbeckma@ncsu.edu" &lt;gdbeckma@ncsu.edu&gt;

Good morning Tom--

Sorry for the delay on this. Good news-- we are all back and healthy! ;-)

Please see the memo below regarding the overlap with ARS/MUS 306 from Rodney.

Best,  
Deanna

## MEMO

To: The UCCC

From: Rodney Waschka

Date: March 30, 2016

Subject: Proposed Music course on songwriting using DAWs

I regret that I cannot attend this meeting because of a long-planned meeting with the Dean, an Associate Dean, and an Assistant Dean of my College scheduled for the same time.

*The proposed Music course significantly overlaps with the ARS/MUS 306 Music Composition with Computers course already offered every semester. Therefore, according to University policies, it should not be instated as a permanent course.*

The areas of overlap include:



In ARS/MUS 306 students learn, among other things, to make compositions, which could be and have been songs, using computers in non-trivial ways. The students choose the type of piece or piece(s) they will make.

Students are allowed and encouraged to include other instrumentalists or vocalists in their compositional work.

In ARS/MUS 306 a number of software platforms for making music are discussed and demonstrated, including simple software digital audio workstations (DAW). Students are taught how to use them. A DAW is merely any software that allows the recording, editing, and reproduction of digital audio.

Students are allowed to choose the platform upon which they will build their compositions. Many choose items called "digital audio workstations". Some students choose to write their own software from the ground up (including GUIs).

Students who successfully complete ARS/MUS 306 know how to use a DAW and understand much of what is going on "inside the black box" with the digital synthesis algorithms and the digital manipulation algorithms. They can use this knowledge to write songs if they choose.

Students present their compositional work in class, both drafts and final products, and that work is subjected to peer and instructor critique.

As the instructor for ARS/MUS 306, and as a composer who has written two major song cycles -- one using a digital audio workstation, I do not object to songs or to the use of DAWs to help create them.

On Mon, Mar 14, 2016 at 4:55 PM, Tom Koch <[tdkoch@ncsu.edu](mailto:tdkoch@ncsu.edu)> wrote:

Deanna,

Thank you for the thoughtful reply regarding our request for a consult. I especially am pleased to hear that COM considers this course a complement to, rather than a duplication of, their existing COM 307...and that is how instructor Prof. Lohmeyer expressed it to me when Dr. Gary Beckman and I met with him 2 weeks ago. Prof. Loymeyer was enthusiastic not only about the interdisciplinary collaborative possibilities between COM and MUS, but also about the number of COM students (aspiring journalists, broadcasters, etc.) who might professionally benefit from this MUS course in digital songwriting. As you may know, MUS is actively pursuing interdisciplinary STEM partnerships by introducing new courses in digital songwriting, pop music, music industry, and arts entrepreneurship, and MUS is grateful to have the support of upper administration in this endeavor.

As I anticipate attending the UCCC and CUE meetings when MUS 270 is brought forward for approval, I'm hoping you or Dr. Waschka could clarify the "significant overlap" with ARS/MUS 306. To my knowledge, ARS/MUS 306 explores none of popular songwriting, beat-based methods, or the operation of DAWs.

Thank you, Tom

—

Dr. Barbara M. Kirby, Professor  
Associate Vice Provost, Administration and Curricular Programs  
University College  
Division of Academic and Student Affairs  
NC State University  
CB #7105, 310 Park Shops  
Raleigh, NC 27695-7105  
Phone: 919.515.3037  
Phone: 919.513.4363  
Fax: 919.515.4416  
[barbara\\_kirby@ncsu.edu](mailto:barbara_kirby@ncsu.edu)  
<http://dasa.ncsu.edu/academic-success/>

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**Syllabus**  
**MUS 305 – Music Composition**  
**NC State University**  
**Spring 2016**

Dr. Peter Askim  
Class Meetings: Tu-Th 11:45-1:00, Broughton 1403  
Office: Price 207  
Office Hours: Tu, Th: 1:15-2:15 pm or by appointment  
E-Mail: paaskim@ncsu.edu  
Office Phone: 919-515-8279

**Course Description:**

Study and creation of musical works. Emphasis on writing original music and works imitative of conventional and contemporary musical styles. Students may have to provide their own transportation to an on- or off-campus event and to cover the cost of that event.

**GEP:** This course fulfills GEP categories in Visual and Performing Arts, but check with your advisor on counting this course for degree requirements.

**Course Credit:** 3 Credits

**Prerequisite:** Music Theory I (MUS 103) or consent of instructor.

**Learning outcomes:**

List the Instructor's student learning outcomes that are relevant to the GEP Visual & Performing Arts:

Obj. 1) Deepen their understanding of aesthetic, cultural, and historical dimensions of artistic traditions.

- Students will demonstrate knowledge of the analytical and compositional techniques that form the basis of Western art music and apply these techniques to works from the Western repertoire

Measure for the above outcome:

- Through score reading, listening exercises, and musical analysis, students will acquire a foundation in compositional techniques such as motivic permutation, scale organization, and formal structure, which they will demonstrate by application to their own compositions.

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.

- Students will develop critical listening and analytical skills and identify and demonstrate these skills in class discussions and on assignments in the course of *active* listening and musical analysis.

Measure for the above outcome:

- Students will complete listening assignments and a Listening Journal that require them to discuss repertoire using critical listening and analytical skills taught in class.

Obj. 3) Strengthen their ability to create, recreate, or evaluate art based upon techniques and standards appropriate to the genre.

- Students will create original musical compositions using techniques and standards appropriate to the discipline.

Measure for the above outcome

- Students will compose individual works and present these in class and/or on homework assignments. These compositions will be the basis of class discussions, group critiques, and a final, live performance.

**Textbook:** Required readings, analyses and assignments will be posted on the Moodle site on a regular basis.

You will need staff paper to notate your compositions. You may either buy music paper or download free staff paper here: <http://people.virginia.edu/~pdr4h/musicpaper/>

We will stress composition with paper and pencil. However, notation software is also useful. Two free programs are: <http://musescore.org> and <http://www.finalemusic.com/products/finale-notepad/resources/>

**Analysis and Listening:** Frequent analyses, listening assignments and Listening Journals will be required and are a vital part of the course. Specifications for each analytical assignment will be given along with the assignments. Weekly listening assignments will be posted on Moodle. Students' reaction to and commentary upon each week's listening will be documented in a 2-page (12 pt. font) Listening Journal. Though they may be relatively informal in style, Listening Journals are an integral part of class structure and evaluation.

**Model Compositions:** The first portion of the course will consist primarily of brief composition assignments based on models presented in class and/or in homework assignments. These compositions will be the basis of class discussions and group critiques.

**Class Participation:** In-class presentation, discussion, analysis and critique of student works will form a significant portion of class meetings. For each model composition assignment, students must be prepared to present their work to the class. They will be expected to participate in a group discussion of their own works and the works of others. Students will also be expected to show and discuss their work on the final project to the class as it progresses.

**Midterm Project:** The midterm project will be a two page composition for solo piano based on the model composition from the semester to that point. The compositions will demonstrate the ability to generate larger musical structure through the development of a limited amount of motivic material.

**Final Project:** A final composition for live players will be a primary focus of the second portion of the class. Students will create an original composition for a mutually agreed upon instrumentation, with the goal of having the work read and possibly performed by live players. Drafts and work-in-progress presentations will precede the completion of the project and will be shown to the class and/or instructor on assigned dates. The due date for the final project will depend on availability of the performers, but will be on or before May 5, the date given by the exam calendar as the final exam period.

**Tests:** There will be no scheduled tests, and no Final Exam (the Final Project will take the place of the Final Exam.) However, there may be short quizzes given at the instructor's discretion. There will be a mid-term project which will be a significant part of the homework grade.

**Concert attendance and commentaries:** Each student will attend two concerts featuring 20<sup>th</sup> and/or 21<sup>st</sup> century music. (There may be a charge for concerts.) *Within two class meetings of each performance*, the student will submit a 2-3 page (12 pt. font) commentary on the concert. The commentary will include discussion of the repertoire, performance and/or concert-going experience using critical listening and discussion techniques developed in Listening Journals and class activities. Guidelines for the commentaries will be discussed in class. The writing will be grammatically correct, collegiate-level writing, and the style must be more formal than that of the Listening Journals.

**Course Requirements and Evaluation:**

Short analysis and composition assignments, a weekly listening journal, class discussions and critiques, concert attendance/commentaries and a final project will be used in evaluation.

**Course Requirements and Evaluation:**

25% Composition homework assignments

10% Listening Journals and Analysis Assignments

15% Mid-term project

10% Class participation

10% Concert attendance/commentary

30% Final composition project (including drafts and work-in-progress presentations)

**Grading Scale:** Letter grades will be awarded on the following scale:

A+ 100 – 97.00	B+ 89.99 – 87.00	C+ 79.99 – 77.00	D+ 69.99 – 67.00
A 96.99 – 93.00	B 86.99 – 83.00	C 76.99 – 73.00	D 66.99 – 63.00
A- 92.99– 90.00	B- 82.99– 80.00	C- 72.99 – 70.00	D- 62.99– 60.00

**Attendance:** Attendance is a critical component of the class, as lectures will present and expand upon material not covered in the reading and listening assignments. Students are permitted **two** unexcused absences. Other absences will require written excuses or prior approval. Attendance will be taken at each class. See this link for the university policy on excused absences:

[http://www.ncsu.edu/policies/academic\\_affairs/courses\\_undergrad/REG02.20.3.php](http://www.ncsu.edu/policies/academic_affairs/courses_undergrad/REG02.20.3.php)

Absence on the day of a test will only be permitted if the student has prior permission or if the student contacts the instructor within 24 hours of the missed exam with a valid excuse. Any possible make-up will be at the discretion of the instructor and in accordance with university policy.

The following scale will be used to determine your semester grade as it relates to an excess of the allowable number of absences:

**First 2 absences** = no reduction in the cumulative course grade

**3-4 absences** = reduction of **5%** in the cumulative course grade (e.g., 90% becomes 85%)

**5-6 absences** = reduction of **10%** in the cumulative course grade (e.g., 90% becomes 80%)

**7-8 absences** = reduction of **20%** in the cumulative course grade (e.g., 90% becomes 70% C-)

**9+ absences** = reduction of **40%** in the cumulative course grade (e.g., 90% becomes 50% F)

**Trips:** Attendance at one of the Music Department on-campus events is encouraged for the required concert attendance. Other concerts may possibly be off-campus, to which students may be required to provide their own transportation and event charge.

**Adverse weather policy:** If classes are cancelled due to adverse weather conditions, the university will announce this on the school website. As long as the university remains open and classes meet as scheduled, attendance is taken and your presence is expected.

**Class Policies:**

1. **Classroom expectations: No phones or laptops, no food after class has begun**
2. Email: Important class notices will be communicated by email at times. Please make sure that you have registered your correct email with the university records and you check this email account regularly.

**Policy on Incomplete Grades:** The grade of Incomplete (“IN”) may be given in any course at the discretion of the instructor for work not completed because of a serious interruption in the student's work not caused by their own negligence. For further details, see <http://www.ncsu.edu/grad/handbook/sections/3.18-grades.html#F>

**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>. See <http://policies.ncsu.edu/policy/pol-11-35-01> for a detailed explanation of academic honesty. Your signature on any test or assignment indicates “I have neither given nor received unauthorized aid on this test or assignment.”

**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>.

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**Music 305 Music Composition  
Course Outline**

**Week 1:** January 7

Class Introduction, syllabus

Listening and analysis: Bach: *Prelude #1* from *WTC*, *Invention #1*

Motives

**Week 2:** January 12, 14

Listening and analysis: Motivic unity in Beethoven *Symphony #5*, Shostakovich *Cello Concerto #1*

Bruce Adolphe *The Mind's Ear*: Chapter 1 readings and exercises

Composition: Short assignment on motivic permutations and composition of brief melody

**Week 3:** January 19, 21

Listening and analysis: Motivic Unity in Brahms *Op. 118, #2*

Bartok *Mikrokosmos* examples #10, 11, 25, 26, 27, 28, 29, 30, 31

Composing a motive, deriving motivic permutations

Compose a short Bartok-inspired work

**Week 4:** January 26, 28

Listening and analysis: Bartok *Music For Strings, Percussion and Celeste*

Discussion of large-scale one movement form

Composition: Composition using octatonic, whole tone and pentatonic scales

**Week 5:** February 2, 4

Reading: Planning a short composition; Short readings on composing a short work

Listening and analysis: Bartok *Mikrokosmos* #45, 53, 59, 72, 78

Composition: Compose a 1-2 page piano piece; in class presentation and discussion

**Week 6:** February 9, 11

Listening and analysis: Short works including piano: Chopin *Prelude in e minor*, Ligeti *Fanfares*, Prokofiev *Five Melodies*

Reading/composition: Bruce Adolphe *The Mind's Ear*: readings and composition assignments: "Found in Translation" and "Compose Your Own Leitmotif", "Transfusion"

**Week 7:** February 16, 18

Listening and analysis:

Beethoven *Moonlight Sonata*, Ligeti *Horn Trio*

Discussion Emotion in music

Assign Midterm project 2-3 page piano work: First drafts presented in class

**Week 8:** February 23-25

Listening and Analysis:

Shostkovich *Viola Sonata*

Ligeti Piano Etudes: *Dèsordre, Cordes à Vides*

Bartok *Mikrokosmos* #70, 71, 72, 75, 78, 79, 80

Individual meetings, In-class presentations of revised piano work

**Week 9** March 1, 3

Midterm Project due March 1 – 2-3 page piano work

In-class presentations of Midterm project

**Week 10**

Spring Break

**Week 11:** March 15, 17

Listening and analysis: Clarinet Repertoire

Introduction to writing for clarinet, begin working on final project

**Week 12:** March 22-24

Guest speaker, Marianne Breneman, Clarinet – Composing for Clarinet ;  
In-class Presentation and discussion of motivic material for Final Project

**Week 13:** March 29, 31

Presentation and discussion of first drafts of Final Project

**Week 14:** April 5, 7

Presentation and discussion of second drafts of Final Project  
Individual Meetings

**Week 15:** April 12, 14

In class readings and workshops with performers of Final Project

**Week 16:** April 19, 21

Final revisions, in-class presentation and discussion of Final Projects

**Final Project - Original Work for Clarinet and Piano –  
Due last day of class (April 21)**

Informal optional performance of final project compositions – date to be announced



**SYLLABUS**  
**MUS 310: Music of the 17<sup>th</sup> and 18<sup>th</sup> Centuries**  
**Fall 2015, MWF 11:20-12:10**

Classroom: Broughton Hall, 1402  
 Instructor: Dr. Tom Koch ("Coke")  
 Office: Broughton Hall, 2412  
 Email: tom\_koch@ncsu.edu  
 Phone: 919-515-0149  
 Office Hours: Mondays 9:00-10:00, or by appointment

**Course Description:** This class constitutes a survey of European music from 1600 to 1820, with an emphasis on the characteristics forms and styles of the Baroque and Classical eras. The course examines the major composers from Claudio Monteverdi through Ludwig van Beethoven and their representative works in light of social, political, and cultural influences. Students may be required to attend an on- or off-campus event at their own cost and to provide their own transportation. This class fulfills GEP categories in Visual and Performing Arts and Global Knowledge. There are no prerequisites and no expectation of your ability to read music.

**GEP Objectives correlated with GEP Student Learning Outcomes and Measures:**

<p>Each course in the <i>Visual and Performing Arts</i> will provide instruction and guidance that helps students to:</p> <ol style="list-style-type: none"> <li>1. Deepen their understanding of aesthetic, cultural, and historical dimensions of artistic traditions.</li> <li>2. Strengthen their ability to interpret and make critical judgments about the arts through the analysis of structure, form, and style of specific works.</li> <li>3. Strengthen their ability to create, recreate, or evaluate art based upon techniques and standards appropriate to the genre.</li> </ol>
<p>Student learning outcome(s) for <b>Objective #1</b>: Students will describe specific social, historical, and artistic contexts of 17-18th-century Western music, such as composition and performance opportunities, political and economic circumstances, contributions of contemporary literary and artistic movements, and the effects of the social and physical sciences</p>
<p>Measure(s) for above Outcome(s): Sample test question: "Discuss George F. Handel's influence on the genesis and style of Joseph Haydn's oratorios, such as <i>The Creation</i>?"</p>
<p>Student learning outcome(s) for <b>Objective #2</b>: Students will distinguish among various genres of 17-18th century art music through an analysis of musical style, formal structure, and performance contexts.</p>
<p>Measure(s) for above Outcome(s): Sample essay question: "Bach composed many of his 300 church cantatas while working in Leipzig. What is a 'church cantata,' and how do its form, style, and function differ from the solo cantatas of Italian composers, such as Barbara Strozzi?"</p>
<p>Student learning outcome(s) for <b>Objective #3</b>: Students will develop critical listening skills that enable them to distinguish the ways composers organize musical elements to create an art work that is coherent and unified.</p>
<p>Measure(s) for above Outcome(s): Sample listening journal question: "As you listen to Handel's Overture to <i>Giulio Cesare</i> (1724), discuss the ways in which the composer's choices in instrumentation and his treatment of instrumental textures provide coherence and unity to the work."</p>

<p>Each course in <i>Global Knowledge</i> will provide instruction and guidance that help students to <i>achieve goal #1 plus at least one of #2, #3, or #4</i>:</p> <ol style="list-style-type: none"> <li>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. <i>And at least one of the following:</i></li> <li>2. Compare these distinguishing characteristics between the non-U.S. society and at least one other society.</li> <li>3. Explain how these distinguishing characteristics relate to their cultural and/or historical contexts in the non-U.S. society.</li> <li>4. Explain how these distinguishing characteristics change in response to internal and external pressures on the non-U.S. society.</li> </ol>
<p>Student learning outcome(s) for <b>Objective #1</b>: Students will explain the historical and cultural influences on musical composition and performance in Western Europe between 1600 and 1820.</p>
<p>Measure(s) for above Outcome(s): Sample essay question: “How did the principles of Renaissance Humanism influence the musical aspirations of the Florentine Camerata in its attempt to recreate ancient Greek drama?”</p>
<p>Student learning outcome(s) for <b>Objective #2</b>: Students will compare and contrast representative styles of late Baroque vocal music that emerged in Germany, Italy, France, and England.</p>
<p>Measure(s) for above Outcome(s): Sample essay question: “In contrast to Johann S. Bach, who spent his entire career in central Germany, George F. Handel traveled widely and more overtly integrated the musical styles of Germany, Italy, France, and England. Discuss characteristics of these national styles and cite examples in Handel’s operas and oratorios.”</p>

**Textbook:** No textbook is required, but students must have access to the internet. Course content will be delivered through class lectures and Moodle notes. To discourage extracurricular use of electronic devices during class, electronic devices (laptops, tablets, phones, etc.) may not be used during class unless specified by the instructor. Notes should be taken by hand.

**Attendance Policy:** Attendance is mandatory and is taken at each class. **IF YOU DO NOT ACKNOWLEDGE YOUR PRESENCE WHEN ROLL IS CALLED, YOU WILL BE MARKED ABSENT.** <http://policies.ncsu.edu/regulation/reg-02-20-03>

- Two (2) absences are permitted for ANY reason (whether excused or unexcused) without penalty in the cumulative course grade, with the following exception:
  - **If you are absent on the day of a test**, you must email me within 24 hours about the nature of the absence (out of fairness to the rest of the class, do NOT wait until the subsequent class to let me know of your absence or it will be too late for a make-up test). Together we will coordinate a time for a make-up test. Unless otherwise warranted, make-up tests must be taken within 2 school days of the absence and must be accompanied by official documentation of absence dated on the day of the absence. Test grades will only be validated pending official documentation of absence. Only emergency or pre-approved absences on the day of a test will be accepted in order for a make-up test to be validated (emergency absences constitute death or serious injury in the family, serious illness or injury of the student, and court appearances, as allowed by university policy)
- Upon your 3<sup>rd</sup> and each subsequent absence, you must provide official documentation to me by the subsequent class in order to avoid the penalties outlined below (see “Class Attendance”). **NOTE:** EACH absence beyond 3 must be accompanied by its own documentation; for instance, if you are absent on Monday and again two days later on Wednesday, I will require one document with Monday’s date and another document with Wednesday’s date.

- If you realize within the first week of class that (1) the anticipated number of absences will exceed the number of excused absences permitted in the course, or (2) your schedule necessitates regular tardiness or early dismissals, you should discuss the situation with me right away.
- Two (2) tardies of 5 or more minutes will result in one (1) absence.
- Each instance of behavioral disturbance, sleeping in class, working on outside homework, cell phone usage, texting, eating, or other extracurricular activity will result in one absence.

**Adverse weather policy:** If classes are cancelled due to adverse weather conditions, the university will announce this on the school website. As long as the university remains open and classes meet as scheduled, attendance is taken and your presence is expected.

**Automatic Disenrollment Policy:** Students who miss the first two class sessions will automatically be disenrolled in order to accommodate students waiting to enroll.

**Extra Credit Policy:** This course makes no allowances for extra credit (please don't ask). Your final grade is the result of tests, assignments, and attendance. Please make an appointment with me long before a test if you are having trouble with the content.

**Grading:** Course grading will be assessed by means of (1) tests, (2) listening journal, (3) concert review, and (4) class attendance

- **Tests:** Three (3) tests are given throughout the term and are graded equally. Tests are generally multiple-choice, with questions derived from (1) class lectures, (2) Moodle notes, and (3) listening assignments. In addition to questions of a general historical nature, tests will ask you to hear, analyze, or identify features of compositions that we discussed in class. Thus, it is imperative that you take time outside class to listen to each work assigned. Tests are not cumulative, but include only what was covered since the previous test. Make-up tests will be validated pending official documentation of absence (see "Attendance Policy").
- **Listening Journal:** You will be required to keep a journal of your musical observations while listening to assigned compositions.
  - The completed journal will contain about 25 entries (i.e., 25 individual musical selections) and will be submitted in 2 installments (see "Course Outline"). Each entry should average  $\frac{3}{4}$  - 1 page (typed, single-space, 12-pitch font).
  - Compositions assigned for your journal will be heard and discussed in class and assigned on a weekly basis.
  - Journal installments submitted after the deadline will be deducted 10% per day up to 4 days, after which they will not be accepted and you will receive 0% for that installment. Incomplete journals will be deducted proportionally (e.g., a submission of only 18 of 20 required entries will be deducted an additional 10% – e.g., 90% becomes 80%).
- **Concert review:** You are required to attend one NCSU music department event listed on the Events website (<http://www.ncsu.edu/music/events.html>) and to write an analytical review of that concert.
  - The Review must NOT be based on a concert in which you yourself are performing. This project is about your experience as a distanced listener, absorbing the ambiance of the performance without the advantage of repeated hearings or rehearsed

knowledge. It is as much about first impressions as about critical listening. Additionally, if you are taking another music class that also requires a Concert Review, you must not recycle the same review for both classes. This will result in 0%.

- Concert Reviews submitted after the deadline will be deducted an additional 10% per day up to 4 days, after which they will not be accepted and the student will receive 0%.
- The Concert Review should be 2½ -3 typed pages (double-spaced, 12-pitch font, 1" margins).
- Before you attend, prepare yourself by reading the guidelines and sample review at the end of this syllabus.
- See further details and a sample review at the bottom of this syllabus
- **Class Attendance:** Your first two (2) absences are allowed for any reason without documentation (excused or unexcused), unless it occurs on the day of a test (see above). The following scale will be used to determine your semester grade as it relates to an excess of the allowable number of absences:
  - **First 2 absences** = no reduction in the cumulative course grade
  - **3-4 absences** = reduction of 5% in the cumulative course grade (e.g., 90% becomes 85% B)
  - **5-6 absences** = reduction of 10% in the cumulative course grade (e.g., 90% becomes 80% B-)
  - **7-8 absences** = reduction of 20% in the cumulative course grade (e.g., 90% becomes 70% C-)
  - **9+ absences** = reduction of 40% in the cumulative course grade (e.g., 90% becomes 50% F)

### Grade weight:

55% Tests

40% Listening journals

5% Concert review

100%

**Grading Scale:** Letter grades will be awarded on the following scale:

A+ 100 – 97.00	B+ 89.99 – 87.00	C+ 79.99 – 77.00	D+ 69.99 – 67.00
A 96.99 – 93.00	B 86.99 – 83.00	C 76.99 – 73.00	D 66.99 – 63.00
A- 92.99– 90.00	B- 82.99– 80.00	C- 72.99 – 70.00	D- 62.99– 60.00

**Policy on Incomplete Grades:** The grade of Incomplete (“IN”) may be given in any course at the discretion of the instructor for work not completed because of a serious interruption in the student's work not caused by their own negligence. For further details, see <http://www.ncsu.edu/grad/handbook/sections/3.18-grades.html#F>

**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>. See <http://policies.ncsu.edu/policy/pol-11-35-01> for a detailed explanation of academic honesty. Your signature on any test or assignment indicates “I have neither given nor received unauthorized aid on this test or assignment.”

**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 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://policies.ncsu.edu/policy/pol-04-25-05> or [http://www.ncsu.edu/equal\\_op/](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 OUTLINE

Dates	Lesson
Aug 19	Overview of the syllabus and introduction to the course
21, 24	Introduction to the Baroque: Claudio Monteverdi and the <i>seconda pratica</i> Giulio Caccini and the Florentine Camerata: the creation of monody
26	Jacopo Peri and the creation of opera
28, 31	Claudio Monteverdi and the dissemination of opera
Sep 2	Claudio Monteverdi and Barbara Strozzi: the concerted madrigal and solo cantata
4, 9	Giovanni Gabrieli and Heinrich Schütz: 17 <sup>th</sup> -century church music
11, 14, 16	Girolamo Frescobaldi, Johann Pachelbel, and Arcangelo Corelli: Instruments and instrumental music of the 17 <sup>th</sup> century
18, 21	Antonio Vivaldi: The solo concerto and concerto grosso
23, 25  25	Jean Baptiste Lully and François Couperin: Music at the French court of Louis XIV  <ul style="list-style-type: none"> <li>• <b>Listening journals, installment #1, are due Friday, Sep 27 by 4 PM. Journals should include all assigned selections from the first day up to and including Vivaldi. The installment should be sent in an email attachment as a single document.</b></li> </ul>
28 Test 1	<ul style="list-style-type: none"> <li>• <b>Test 1 includes all material from the first day up to and including Antonio Vivaldi.</b></li> </ul>
30, Oct 2	Henry Purcell: Music in 17 <sup>th</sup> -century London
5, 7, 12	George Frideric Handel: Music for British royalty, opera, and oratorio
14, 16, 19, 21	Johann Sebastian Bach: The culmination of the Baroque
23	Transition to the Classical period and the Classical style
26 Test 2	<ul style="list-style-type: none"> <li>• <b>Test 2 includes all material after Vivaldi and up to and including J. S. Bach.</b></li> </ul>
28, 30	Christoph W. Gluck and Giovanni Pergolesi: The reform of serious opera and origins of comic opera
Nov 2, 4	Preclassical, Galant, and Empfindsamkeit: Domenico Scarlatti, Johann C. Bach, Carl P. Emanuel Bach and the Classical sonata
6, 9	Franz Joseph Haydn: symphony and string quartet
11, 13, 16, 18, 20	Wolfgang A. Mozart: piano concerto and opera

23, 30, Dec 2, 4	Ludwig van Beethoven: Classical or Romantic?
Dec 7 Dec 11	<ul style="list-style-type: none"> <li>• <b>Concert Reviews are due any time on Mon, Dec 7, as an email attachment (you may submit them earlier)</b></li> <li>• <b>Listening journals, installment #2, are due any time on Friday, Dec 11. Journals should include all assigned selections since Vivaldi. The installment should be sent in an email attachment as a single document.</b></li> </ul>
Wed, Dec 9, 9:00 AM <b>Test 3</b>	<ul style="list-style-type: none"> <li>• <b>Test 3 is Wed, Dec 9 at 9:00 AM (not 8 AM). The test begins at 9:00 and ends at 9:50. DO NOT ARRIVE LATE. Listening selections will be played only once.</b></li> </ul>

## Listening Journal:

The Listening Journal is an account of your aural observations and impressions regarding each work you are assigned. The journal will contain about 30 entries (i.e., 30 individual musical selections) and will be submitted in 2 installments (see "Course Outline"). Each entry should be  $\frac{3}{4}$  - 1 page (typed, single-space, 12-pitch font).

- Journals submitted after the deadline will be deducted 10% per day up to 4 days, after which they will not be accepted and the you will receive 0% for that installment.
- Incomplete journals will be deducted proportionally (e.g., a submission of only 18 of 20 required entries will be deducted an additional 10%).

The purpose of the journal is to enable you to

1. Describe and organize in prose the musical sounds you hear
2. Gain greater understanding of the musical elements and appreciation of major works of Western music through the process of attentive listening
3. Recall specific titles, styles, and composers by documenting particular features of a work that impress you

**Your journal should be written as follows:**

1. Include a heading that identifies the following information:
  - a. Title of the composition (in English and/or original language)
  - b. Composer (first and last name) and country of origin
  - c. Genre (the type of composition, such as concerto, symphony, opera)
  - d. Biographical note (if known) that identifies the life circumstances of the composer at the time of composition, or any historical connection that you yourself find worthy of mention.
2. In three (3) well-developed paragraphs, an analysis of three (3) musical features that grab your attention and that will help you recall the title, period, and composer if and whenever you hear the work again during your lifetime. You may examine aspects of the work you found remarkable or unusual, but make sure you support your impressions with musical details. Above all, your journal entries should consist of a discussion of what you hear happening in the music.
  - a. Your description of these features should be constructed in paragraphs and not simply presented in an outline or bullet points.
  - b. Each entry should explore
    - i. How the composer achieves the musical effect that caused you to take notice. Questions to consider:
      1. How does the composer use dynamics (loud/soft) to achieve expression?
      2. What instruments/voices are used and in what ways does the composer combine them (or not combine them) to create interesting timbres (sound colors)?
      3. Does the tempo (speed of the beat) of the music change and what is the overall effect on the musical drama?
      4. Are the melodies beautiful, uninteresting, memorable, etc.? What makes them so?
      5. Do the harmonies (chords that support the melodies) sound consonant (pleasing and agreeable) or dissonant (harsh to the ear)?
      6. Is the music repetitive, and how does repetition of melodies shape the overall form or design of the work?
    - ii. How the music makes you feel or whether it evokes memories. Questions to consider:
      1. Does it engender in you a certain emotion (melancholy, joy, anger)? What is happening in the music to cause that feeling?
      2. Do you associate the music with a story, movie, poem, or image?
      3. Have you heard this work before and in what context?



### Two examples of exemplary Listening Journal entries:

Composition:	Cruda Amarilli
Composer:	Claudio Monteverdi, Italy
Genre:	Polyphonic madrigal
Biographical note:	This composition was published in Monteverdi's fifth book of madrigals, which incited criticism from his contemporary, Giovanni Artusi, that he had broken the rules of music.

Cruda Amarilli is a prime example of the *seconda pratica*, a term the composer, Claudio Monteverdi, coined himself in order to distinguish his style from the typical polyphonic Renaissance music. While Cruda Amarilli does have polyphonic texture, the parts are sung by soloists rather than the larger groups of the *prima pratica*. Monteverdi believed that solo singing was the key to evoking emotion in the listener, and he uses several soloists, each singing his or her own melody, in Cruda Amarilli to tell the poignant tale of a shepherd who decides to end his life because the shepherdess he loves has rejected him.

Being a polyphonic madrigal, Cruda Amarilli contains multiple vocal parts, but each melody is unique so that at times, all of the soloists are singing the same notes, and at other times, one voice may be prominent. Monteverdi composes these parts so that the contrast in texture throughout the piece highlights the emotional dynamic of the text. What drew my attention to this feature was the second occurrence of the word "cruda" in which a soprano voice is heard first, followed by the rest of the singers. The word "amaramente" (bitterly) is also emphasized by one dominant voice among the others. At one point, when again the soprano voice stands out singing "I mi moró," the beauty of the sound makes me feel the melancholy of the text, which was probably Monteverdi's goal.

The contrast in texture aids in fleshing out the emotional dynamic of the madrigal, but another kind of contrast, the contrast in the vocal pitches themselves, I believe add to the overall beauty and depth of the music. The wide pitch range of the vocal soloists not only adds interest, but they seem to suggest that the shepherd's feelings expressed in the text affect him on many levels. The different voice types are almost like individual facets of the shepherd's emotions. What drew my attention to this was probably the fact that it is so different from the style of popular songs today – more than one voice is almost never heard, let alone such a variety of voice types together. I feel like this variety adds to the beauty of the sound.

The third distinctive feature I noticed is the use of repetition. Cruda Amarilli's text is a pastoral poem written by Giovanni Batista Guarini, but the madrigal does not simply follow the poem's text straight through from beginning to end. Monteverdi utilizes the artistic freedom of music to underline particularly important parts of the text through repetition. This becomes immediately apparent in the beginning of the piece, when the words "Cruda Amarilli" are sung a second time. Other times repetition is particularly apparent include the words "piu fugace" (more elusive) and the end, "I mi moró tacendo." This final phrase is repeated the most, making one feel as if the shepherd is slowly saying goodbye in his last few moments of life before ultimately, the voices die out altogether.

Composition: "**Cruda Amarilli**" (Cruel Amaryllis)

Composer: Claudio Monteverdi, Italy

Genre: Polyphonic madrigal

Biographical note: In Monteverdi's creation of this song, he defies typical Renaissance style by using dissonance, which creates a harsher sound rather than a pleasing, easy to listen to one. Monteverdi, a composer who exemplifies *seconda pratica*, uses this style to make music the servant of the text. In *seconda pratica*, the music sits behind the text in order to express any purpose and emotions embedded in the text first and foremost.

The first musical feature that grasps my attention is the dynamic contrast. I feel like almost every phrase in the middle part of the piece crescendos and then decrescendos, and then a new musical phrase begins. This allows for the song to grow consistently and keeps the listener captivated. The way the song ends in a very quiet manner is also interesting; I thought that a new phrase was going to begin but really the song was finished.

The second musical attribute that I like is the tempo of the work. In *Cruda Amarilli*, Monteverdi uses a slow-moving melodic line at first and then it speeds up with more, faster-moving voices added in the background also. At the climax, the main melodic line moves faster as well. The piece becomes more and more interesting as the melody moves faster up until the climax, and then calms down towards the end of the work where it also becomes quieter. After reading the description on the study guide, this makes me think of the story behind it, with the poet expressing his love for a shepherdess who rejects him, and he then chooses to commit suicide. I think that the tempo changes fit the story line perfectly.

The third musical feature that I noticed is Monteverdi's use of dissonance and consonance throughout the piece. This more prominent use of dissonance, typical of Monteverdi, was a part of the second *pratica* style, and was newer to his audience. More typically, composers before Monteverdi wanted a pleasing sound that agreed with the rules of music and did not care to express greater emotions by using more dissonance. In this song, Monteverdi uses small amounts of dissonance that are resolved quickly. When they resolve, it is very pleasing to the ear. It makes the piece very interesting especially in the middle part of the work when other voices are coming in at contrasting notes and then it almost takes to the very end of the piece for the whole thing to resolve. I like that this dissonance and resolving throughout the work adds drama and fits the story line behind it very well.

### Concert Review

Unlike the Listening Journal, the concert review is an account of your aural experience at a live concert. Rather than an unlimited number of hearings, you will have only one opportunity to listen and collect data from which to form your impressions. Your Review should run about 2½ -3½ typed pages (double-spaced, 12-pitch font, 1" margins).

- Reviews submitted after the deadline will be deducted an additional 10% per day up to 4 days, after which they will not be accepted and the student will receive 0%.

**The purpose of the Concert Review:** Your primary goal in the Concert Review, like the Listening Journal, concerns the treatment of the musical elements: How do the composer and (by extension) the performer(s) organize the musical elements in each work to create a coherent work of art? You don't have to try to discuss all the elements, but focus on 3-4 elements for each work. You may discuss these elements individually, but also try to find relationships among them. If a composition is a multi-movement work, compare/contrast the movements for their handling of the musical elements. If the concert entails many too brief works to generate an efficient or practical discussion of each, select at least 5 or 6 works to focus on.

#### **Attending a live concert of art music:**

1. Arrive early with pencil and paper and obtain a program (a program is a brochure with information on the pieces to be performed)
2. Sit in the middle of the auditorium (if possible) and read through the program. Familiarize yourself with the composers, titles, genres, and any "program notes" (program notes are historical and analytical data about the works to be performed). These will be useful in understanding the music and organizing your report. But don't allow your report to be a reproduction of someone else's ideas.
3. Take brief notes on your surroundings: size and makeup of the audience, atmosphere of the auditorium, description the performers.
4. Do not talk during the performance, but do take notes as you listen. See below "What Should I be Listening For"
5. Hold your applause until the very end of the work; remember that a large work may contain several movements, each separated by a lengthy pause.
6. As soon as you hear something that you'll want to discuss in your review, write it down. Don't depend on your memory. When you get home, you can expand on what you've written.

#### **Writing the report:**

1. Upon arriving home, immediately expand upon what you've written before you forget your initial impressions.
2. When you are prepared to sketch a draft, focus on one piece at a time. Make sure that your final copy is proofread and free of mechanical errors.
3. Your essay should show a logical development of ideas and flow naturally from one thought into another. It should not read like a bullet-point rendition of what you heard.

**What should I be listening for?** As a guide, read through the following questions in preparation for your concert. Don't try to answer all of them, but focus on at least 1-2 from each element group.

#### **Genre, form, and occasion:**

1. Identify the genre (symphony, string quartet, opera, gospel hymn, etc.).

2. Was the work originally intended for a sacred (religious) or secular (non-religious) occasion?
3. Is the composition a single- or multi-movement work?
4. Can you identify the form of the composition or movement based on historical expectations of the genre or class discussions of form? If multi-movement, be prepared to compare the individual movements in their treatment of the elements.

**Timbre (“sound color”):**

1. Is the work vocal or instrumental or a combination of each? If the work is vocal, what is the language? How many and what kinds of instruments/voices are used and in what combinations?
2. Use the following terms to describe timbre, keeping in mind that timbres can exhibit a combination or interchange of any of these.
  - a. Piercing, strident, and bright suggest a “reedy” timbre.
  - b. Mellow, warm, and dark suggest a “flutey” timbre
  - c. Resonant, full, rich, and brilliant suggest a “brassy” timbre
3. How well does the combination of instrumental and/or vocal timbres blend? Does one timbre stand out above the others? This is probably intentional, so describe the effect.
4. Is there a recurrence of a specific timbre or instrumental/vocal combination, and does this recurrence coincide with a return of other elements, especially melody?

**Dynamics and expression:**

1. Discuss in musical vocabulary the general use of dynamics in a composition (e.g., piano, forte, crescendo). Do they essentially remain the same, or change frequently?
2. If significant changes in dynamics occur, are they performed by one section or by the entire ensemble?
3. What emotional effect does a change in dynamics communicate, and what do you think the composer was trying to achieve by this effect?
4. Does the performance contain any prominent accents and what dramatic expression do they convey?
5. What is the general character of the work (e.g., agitated, majestic, lyrical), and how do dynamics and tempo contribute to the character.

**Rhythm and tempo:**

1. Do you feel a direct beat (i.e., can you tap your foot to the pulse)? If so, ascertain which instruments are articulating the pulse. If the beat is indirect, explain whether the difficulty to tap the beat affects your overall listening experience.
2. Describe the tempo in musical nomenclature (e.g., allegro, andante), and evaluate your emotional response to the tempo.
3. Identify the meter as either duple or triple. What instrument or group gives it away?
4. How does the ensemble respond to the manner in which the conductor communicates both the tempo and the expressive nature of the music?
5. Does the tempo and/or meter change in places, and, if so, what is the perceived effect (e.g., excitement, majesty, solemnity, contemplation)?
6. Changes in tempo are often accompanied by changes in other musical elements (e.g., timbre, melody, form). Identify these changes and the musical effect it has on you.

**Melody:**

1. In an extended composition, how many melodies can you identify? How do the properties of contour, motion, range, articulation, as well as the elements of rhythm, timbre, and harmony distinguish the character or mood of one melody from another?
2. For each melody in a composition, picture the contour of the melody. Is it organized into short units containing obvious phrases (ending with cadences), or does it meander for long stretches of time before reaching a cadence (point of repose)?
3. Mentally hum the melody. Would you characterize the motion as primarily conjunct or disjunct, or a combination? If the melody is very disjunct and unsingable, does this affect your listening experience?
4. Listen for the highest and lowest pitches in the melody and determine whether the range is easily singable or more idiomatic to an instrument like a piano or violin, which can encompass a large range with ease.
5. Is the articulation generally legato or staccato, and does it change in the course of the composition. What other musical elements (rhythm, timbre, etc.) accompany the changes in articulation?

6. How do the contour, motion, range, and articulation increase or decrease the dramatic or emotional nature of the work? Does the presence of a text influence choices in contour, motion, range, and articulation. What do think the composer was trying to communicate when he/she made those choices?

### **Harmony and tonality:**

1. Would you characterize the harmonies as generally consonant or dissonant? Do consonance and dissonance convey a sense of tension and resolution and, if so, how does it affect your experience of the music at these places?
2. Listen for harmonic progressions. How often do they lead to the tonic pitch/chord, and can you identify any patterns in the way the progressions are organized?
3. Can you identify whether the tonality is major or minor (listen for the tonic chord)? What feelings or associations do you have with major and minor tonalities
4. If the work is nontonal (not based on tonality), what is the basis of its pitch organization and how does its sound differ from major and minor tonality?
5. Do the harmonies serve basically to accompany the melodies (background), or are they more integrated into the melodic fabric as an essential ingredient of the composition
6. What instruments or voices are performing the harmonies? Do they remain a function of the harmony throughout, or do they also participate in the melodies?

### **Texture (the way in which melodies, harmonies, and rhythms are interwoven to produce a fabric of sound):**

1. Describe the general texture of the sound fabric. How does the combination of various musical features (number of instruments and voice-parts, spacing, register, rhythm and articulation, and timbre) determine if the sound is thick or thin, heavy or light, compact or transparent?
2. Can you identify specific texture? First, listen for a primary melody. Then go back and listen to the other voice-parts. Does the primary melody immediately repeat or overlap itself in another voice-part (*imitative polyphony*)? Is there a secondary melody in another voice-part that participates with the primary melody (*non-imitative polyphony*)? Do the other voice-parts merely provide harmonic accompaniment to the primary melody (*homophony*)?
3. If the voice-parts provide harmonic accompaniment to the primary melody, do their harmonies share the same (or similar) rhythmic values as the primary melody (*chordal homophony*), or do they perform rhythms essentially independent from those of the primary melody (*accompanied homophony*)?
4. Does either the general or specific texture change in the course of the composition (often they do)? What happens in the music to bring about these changes, and are these changes accompanied by changes in other musical properties, such as tempo, articulation, rhythmic values, timbre?

## **Example of an exemplary Concert Review**

### **An Afternoon of Piano Trios**

I attended "An Afternoon of Piano Trios," which was held at NC State's Stewart Theatre on January 25<sup>th</sup>. The concert featured NC State professor Dr. Phyllis Vogel on piano with Fabian Lopez on violin and Leonid Zipler on cello. The theatre was not packed, having only about 100 to 150 attendees. Dr. Vogel welcomed everyone to the concert and began with a few remarks about the nature of the pieces. The two key points she made were that the pieces resembled an emotional roller coaster and that they represented an international sampling of trios. And so, the stage was set for a fantastic performance.

The concert began with Beethoven's "Kakadu" Variations. Not only was the Beethoven unique because it represented Europe, but because it was significantly older than the others. This period-appropriate piece was tonal and seemed to be marked by a sort of simplicity - there were no discords, no difficult rhythms, and each part seemed to fall nicely in place. Perhaps the most interesting aspect of the piece was its use of contrasting themes and textures. It opened in a dark, minor key with call and response among the three instruments in descending arpeggios. After only a short time, however, there was a pause, and a pleasant piano melody began a new, more playful section. This section - the theme of the piece - included a solo of sixteenth notes by the violin followed by a melodically similar solo of eighth notes by the cello. Overall, I feel this piece was the least interesting of the concert, yet it represented a good acclimation to the rich yet contrasting timbres of the piano trio.

The second piece was my favorite and the primary reason I attended the concert. Having studied Shostakovich in fall 2008, I was excited to learn that a piece of his - Piano Trio No. 2 in E minor - would be performed at this concert. In the fall, I primarily researched three of his symphonies (the Fourth, Fifth, and Seventh) and his *Lady*

*Macbeth of Mtsensk District*, while trying to ascertain how politics influenced his writing. This trio, written in 1944, seemed to have many of the same elements as the Fifth and Seventh Symphonies. Most notably, each movement of the Trio carried the same tempos as the Fifth Symphony, and many of the melodies – both nervous (*Allegro non troppo*) and deathly (*Largo*) – sounded like they originated in the Fifth and Seventh as well. Noting the similar movement structure is especially significant for another reason. The cellist, Zipler, commented before the piece's performance that the second movement would be more aptly named "Scherzo." I am inclined to agree with him, both on the alternative name and on his hypothesis: Zipler surmised that Shostakovich may have purposefully avoided the title because 'Scherzo' is Italian for 'joke.' Stalin, clamping down on anything that was mocking or unwholesome to the people, might have condemned the piece, as he did *Lady Macbeth*. I would add to Zipler that it was probably convenient for Shostakovich to reuse the same generic movement titles as the Symphony which heralded his return to 'music of the people.'

I have spent so much space speaking to the immensely intriguing political background that I almost forgot to discuss the performance itself. The trio did a fantastic job producing the intricate tonalities and rhythms associated with Shostakovich's music. The first and third movements (*Andante-Moderato* and *Largo*) contrasted very well with the second and fourth (*Allegro non troppo* and *Allegretto*). One particularly noteworthy moment came in the *Allegro non troppo* when I realized I could not possibly listen to all three instruments at once. Each had its own "melody" – a scattered ruin of flying rhythms and complex discord. I think I was impressed that Shostakovich could write such a tricky part for only three instruments. It was definitely fascinating, and I truly wish to listen to the entire Trio again.

After the intermission, the ensemble performed two South American pieces. The first was an Aria by Villa-Lobos of Brazil (from *Bachianas Brasileiras*, No. 5). Dr. Vogel dedicated the performance of this piece to Coach Kay Yow, who passed away the previous day after a 22-year battle with breast cancer. This Aria, originally written for soprano and eight cellos, was short but quite moving. I could hardly take notes on the piece as I was enthralled by the smooth and sweet melodies. The piece was neither tragic nor mournful, but calming to the senses. In this manner, it was a perfect tribute to NC State's beloved women's basketball coach of 34 years.

The final piece on the program was Four Tangos by Astor Piazzolla of Argentina. This piece showed the versatility of the trio by creating thick and sensual melodies. Much of this was provided by the piano, which almost always had the left hand in the lower quarter of the register. In addition, the violin and cello effectively contrasted sharp accents with long, hairpin quarter and half notes. Perhaps the most interesting portion of this piece to me was in the first movement, *Otono Porteno*, in which the cello repeated a figure that sounded almost identical to the main theme from *Phantom of the Opera*. After a jazzy interlude, the violin then picked up the same melody. I wonder if there was any connection between the two pieces. Furthermore, it was really interesting to see how an almost identical musical phrase can meet the needs of two very different pieces.

This was a great concert. I was thoroughly drawn into the music and enjoyed every moment of it. It contained a little politics, some international flair, and a format (the trio) which I am relatively unfamiliar with. I am glad I went, and look forward to more similar music in the future.

## Criteria for Reviewing Course Action Forms for GEP Courses

### ALL PROPOSED GEP COURSES MUST MEET THE FOLLOWING DEPARTMENTAL CRITERIA

The departmental reviewers should consider the following criteria as well as the Basic Criteria.

*Departmental Criteria*

	Yes	No	Comments
1. Are the stated GEP course learning outcomes supported by the course content?	✓		
2. Are the stated GEP course learning outcomes applicable across all course sections?	✓		
3. Does each stated GEP course learning outcome map to a GEP category objective?	✓		
4. Are the means of evaluating these state GEP course learning outcomes likely to provide the instructor with evidence that will enable him/her to improve student learning in the course?	✓		
5. Are the stated GEP student learning outcomes clearly measurable using the proposed means of evaluation?	✓		

*Basic Criteria*

	Yes	No	Comments
6. Are at least 25% of the course seats non-restricted? If all seats are restricted to a major(s), justification is required.	✓		
7. Is the course offered on a regular basis?	✓		
8. Does the course have no more than one pre-requisite? If there is more than one pre-requisite, justification is required.	✓		
9. Is the course a standard offering (not a special topics or experimental course)?	✓		

Department signature Theresa Koch Title Interim Director Date 4/2/14

THE COLLEGE CURRICULUM COMMITTEES SHOULD CONFIRM THE REVIEW MADE BY THE DEPARTMENT USING THE ABOVE DEPARTMENTAL AND BASIC CRITERIA, IN ADDITION TO USING THE COUNCIL OF UNDERGRADUATE EDUCATION'S CRITERIA ON THE FOLLOWING PAGE.

## Criteria for Reviewing Course Action Forms for GEP Courses

The College Curriculum Committees and the Council on Undergraduate Education should consider the following criteria for GEP course documentation.

<i>Criteria for GEP Course Documentation</i>	Yes	No	Comments
<b>GEP Objectives</b>			
10. Are the GEP category objectives current and complete?			
<b>Student Learning Outcomes</b>			
11. Is there at least one GEP learning outcome listed under each objective?			
12. Is each GEP learning outcome appropriate to the associated GEP objective (i.e. will the achievement of the outcome allow students to meet the objective)?			
13. Does each outcome provide a specific statement (using an appropriate action verb? For example, see <a href="http://www.krummefamily.org/guides/bloom.html">http://www.krummefamily.org/guides/bloom.html</a> ) of what students are expected to do in order to demonstrate that they have achieved the outcome?			
<b>Means of Evaluation</b>			
14. Is there at least one means of evaluation listed under each outcome?			
15. Is each means of evaluation appropriate to the associated outcome (i.e. will it provide data that will allow the instructor to judge how well students have achieved the outcome)?			

**Miscellaneous Comments**

College Signature \_\_\_\_\_

Name \_\_\_\_\_

Title \_\_\_\_\_

Date \_\_\_\_\_



Enrollment Management and Services  
 Goodnight Scholars Program  
 goodnight.ncsu.edu

Campus Box 7529  
 306 Peele Hall  
 Raleigh, NC 27695-7529  
 P: 919.515.9659

To: Mike Mullen, Vice Chancellor and Dean for Academic Affairs  
 From: Allison Medlin, Director, Goodnight Scholars Program  
 Subject: Minor Action for creating the GSP prefix for offerings by the Goodnight Scholars Program  
 Date: February 29, 2016

**Proposed details:**

CIP Code: 30.9999  
 Academic Organization: 24UC  
 Preferred Prefix: GSP  
 Program/College: UC


**Proposed effective date:**

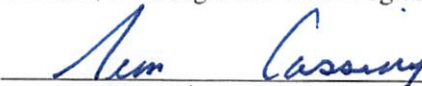
Upon approval

**Proposed change and justification:**

The Goodnight Scholars Program is simultaneously proposing two new courses (submitted temporarily as USC 250/251) and the creation of a new GSP prefix. With the approval of the prefix, these courses would be re-titled GSP 201/202. We have offered these courses as pilot courses with the USC 298 prefix/number during 2015-16. It is our intention that these courses become permanent course offerings, required of each freshmen class of Goodnight Scholars. The creation of the prefix follows in the spirit of the USP, HON and PRK prefixes. It also allows us to add additional Goodnight Scholars courses in the future under a single prefix.

**Signatures (As Required):**

 2-29-16  
 Director, Goodnight Scholars Program Date

 3-14-16  
 Chair, University College Courses and Curricula Cmte Date

 3/16/16  
 Dean, University College Date

\_\_\_\_\_  
 Chair, University Courses and Curricula Committee Date

\_\_\_\_\_  
 Dean, Academic and Student Affairs Date



**PHI 309 POLITICAL PHILOSOPHY**  
**Professor T. J. HINTON**  
**TH 1.30-2.45 pm**  
**Winston Hall 114**

The aim of this 3 credit course, which has a prerequisite of one PHI course, no co-requisites or enrollment restrictions, and which counts towards the GEP Humanities requirement, is to provide students with a comprehensive overview of political philosophy. We seek to clarify our understanding of some of the values that are central to social and political life, as well as our understanding of some of the principles of political morality. Among these values are such fundamental goods as liberty, equality, justice, and democracy. We aim to achieve these goals by examining leading philosophical theories that address themselves to the analysis of these values and principles.

Catalog description: Philosophical study of important political ideas and values such as liberty, equality, justice, rights, and democracy. May include readings from classical and contemporary sources.

**GEP Humanities Objectives**

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 relate important philosophical accounts of such fundamental goods as liberty, equality, justice, and democracy to the human experience.

Relation of Course Specific Learning Outcome to GEP: The philosophers we study in this course offer deep, interesting, and controversial accounts of such fundamental goods as liberty, equality, justice, and democracy. By interpreting these accounts, students will learn to apply them to the human experience.

Assessment: Essay questions on the homeworks, the papers and the final exam. Questions in the papers and exams might include the following: “Critically examine Nozick’s justification of private property”; “Critically evaluate Rousseau’s explanation for the origins of social inequality.”

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 reconstruct the arguments offered by the philosophers we study in this course.

Relation of Course Specific Learning Outcome to GEP: By analyzing and assessing the arguments of the philosophers we study in this course, students will become aware of how interpretation is a critical form of knowing.

Assessment: Essay questions on the homeworks, the papers and the final exam. Sample homework questions might include: “Why does Hobbes think that the state of nature leads to war?”; “Why does Rawls think that parties in the original position would choose a principle of equal basic liberties?”

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 produce their own philosophical arguments about such fundamental goods as liberty, equality, justice, and democracy.

Relation of Course Specific Learning Outcome to GEP: By producing their own philosophical arguments about such fundamental goods as liberty, equality, justice, and democracy, students will make academic arguments about the human experience using reasons.

Assessment: Essay questions on the homeworks, the papers and the final exam. Questions in the papers and exams might include the following: “Is alienation unavoidable?”, “Is Berlin right to repudiate positive liberty?”

### Coursework

The coursework component of the final grade is determined by student performance in four areas: regular homeworks (20%), reading assignments (10%), two term papers (35%), and a final exam (30%). (Attendance counts for 5%.)

The regular homework questions will be posted on Moodle in advance of each class, starting on January 12, 2016. To access the site, go to the following URL: <https://wolfware.ncsu.edu/>. The questions will concern the reading that has been assigned for the class in question and will be found under the heading “Homework Assignments” on the main page. Answers to each question set—which must be completed on line—are due by 1 p.m. on the day of the class to which they relate. There will be no opportunity for late submissions, except as permitted by the university **Attendance Regulations (NCSU REG02.20.03)** <http://policies.ncsu.edu/regulation/reg-02-20-03>. Regular homeworks will be graded using a credit/no credit system. Each “no credit” subtracts about 0.83% from the total 20% allotted to regular homeworks. To earn a “credit” for a given assignment, a student must demonstrate an honest effort to answer each of the assigned questions. One word (or even one sentence) answers, incomplete submissions, fabulously colourful last-minute guesses, and so on do not count as honest efforts.

The two reading assignments will be ask the same kinds of questions as regular homework assignments, the main difference being that they will each be graded out of 5%. The due dates for these will be announced in class no later than five days ahead of time.

Two papers will be due during the semester. The papers ought to be about 1,300 words long, exclusive of any bibliography and footnotes, and must be submitted on the Moodle site by the following dates and times:

Paper 1: 2/21 by 11:55 pm

Paper 2: 3/27 by 11:55 pm

Your answers to the final exam questions must be submitted on the Moodle site no later than 4 p.m. on Thursday, May 5. The exam will consist of essay questions based on the material we have covered during the semester.

### Contacting me

My office is in Withers Hall 456 and my telephone number is 919-513-7941. My office hours are on Tuesday and Thursday afternoons between 3.00 and 3.30 p.m., or by appointment. My email address is [thinton@ncsu.edu](mailto:thinton@ncsu.edu). Email is the best way to contact me.

### Readings

The following books are required

Wendy Brown *Undoing the Demos* (Zone, 2015) \$29.95 new

Thomas Hobbes *Leviathan* (Penguin, 1982) \$12.00 new

Rahel Jaeggi *Alienation* (Columbia, 2014) \$35.00 new

John Locke *Second Treatise of Government* (Hackett, 1980) \$9.00 new

Jean-Jacques Rousseau *Discourse on Inequality* (Oxford, 2009) \$9.95 new

The remainder of the readings will be available on electronic reserve from the D. H. Hill Library. Materials relevant to the course, including important class notes, may, from time to time be posted on the Moodle website.

### **Policies and grades**

Failure to submit homework or reading assignment answers on time causes you to receive a “no credit” for homeworks or else 0/5% for reading assignments. For each “no credit” you incur, your overall homework grade will be penalized by about 0.83% (=20%/24 homeworks).

Late papers will be penalized as follows:

Submission after 1am but before 11pm of the day after the due date: -2/15% or -2/20%

Submission after 12:01am each subsequent day: -3/15% or -3/20%

unless you have an excuse considered legitimate under the University’s **Attendance Regulations (REG02.20.03)**. Late work is penalized for reasons of fairness: if you have had more time to do the work, it ought to be of a higher standard than work that was submitted by other people on time.

To obtain credit for the course (that is, to pass the course) all of the assignments must be completed.

The final grade will be calculated as follows:

Attendance: 5%; Homework: 20%; Reading Assignments 10% (2×5%); Paper 1: 15%; Paper 2: 20%; Final Exam: 30%

Letter grades are valued as follows (with round-up for 0.50% or greater):

A+=97%; A=93%; A-=90%; B+=87%; B=83%; B-= 80%; C+=77%; C=73%; C-=70%;  
D+=67%; D=63%; D-=60%; F=59-0%

Attendance at the lectures is mandatory. Points for attendance are allocated as follows: 0-2 unexcused absences: 5%; 3-4 unexcused absences: 4%; 5 unexcused absences: 3%; 6 unexcused absences: 2%; 7 unexcused absences: 1%; more than 7 unexcused absences: 0%. University excused absences as defined per the University’s **Attendance Regulations (NCSU REG02.20.03)** shall be accepted.

Only students who have completed all of the course requirements and who are unable to submit the final exam on time will be eligible for an Incomplete (IN).

Conversion from letter grading to credit only (or S/U) grading is subject to university deadlines. Students who are taking the course for GEP Humanities credit should not take the course for credit only. Refer to the Registration and Records calendar for all such deadlines relating to grade status conversion. Incompletes (IN) will be assigned at the instructor’s discretion in line with university policies on grades. See: <http://policies.ncsu.edu/regulation/reg-02-50-03>. No auditors will be allowed.

Please familiarize yourself with the university’s policy on academic integrity. I consider each of you bound by the Pack Pledge. In particular, make sure that you scrupulously document the sources of all the ideas you borrow from other people: failure to do so is plagiarism, and may lead to your failing the class. See the **Code of Student Conduct policy (NCSU POL11.35.1)** <http://policies.ncsu.edu/policy/pol-11-35-01> and the Pack Pledge. [“I have neither given nor received unauthorized aid on this test or assignment”]

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> Students with verified disabilities are encouraged to make an appointment with the instructor to discuss academic accommodations.

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.

*Students are responsible for reviewing the NC State University PRR's located at <https://dso.dasa.ncsu.edu/responsibilities/> which pertains to their course rights and responsibilities.*

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 governing discrimination, harassment, and retaliation may be accessed at [http://www.ncsu.edu/policies/campus\\_environ](http://www.ncsu.edu/policies/campus_environ) or [http://www.ncsu.edu/equal\\_op](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.

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. <http://policies.ncsu.edu/regulation/reg-02-20-11>

Philosophy depends on mutually respectful dialogue: for this reason class participation is actively encouraged. You may be asked to leave the classroom if you spend any time doing other work or surfing the Internet or being disruptive. Should you be asked to leave, you will be counted as absent for that day.

**COURSE SCHEDULE**

(Please note that this syllabus may be changed. If it is changed, students will be notified)

- 1/7 Plato: The analogy between the soul and the *polis*  
Reading:  
 Excerpts from Plato's *Republic* (on e-reserve)
- 1/12 Aristotle: The good life  
Reading:  
 Aristotle's *Nicomachean Ethics*, book one (on e-reserve)  
 Homework 1 due by 1:00pm
- 1/14 Aristotle: The *polis* and natural inequality  
Reading:  
 Excerpts from Aristotle's *Politics*, excerpts from book one and book three (on e-reserve)  
 Homework 2 due by 1:00pm

- 1/19 The Levellers: Radical political egalitarianism  
Reading:  
John Lilburne "The freeman's freedom vindicated" pp. 31-32 (on e-reserve)
- Hobbes: The natural condition of human beings  
Reading:  
*Leviathan*, pp. 81-83, 118-130, 150-152, 160-168, 183-188  
Homework 3 due by 1:00pm
- 1/21 Hobbes: The laws of nature and the social contract  
Reading:  
*Leviathan*, pp. 189-208, 214-222  
Homework 4 due by 1:00pm
- 1/26 Hobbes: The sovereign  
Reading:  
*Leviathan*, pp. 223-241, 251-257, 261-274  
Homework 5 due by 1:00pm
- 1/28 Locke: The state of nature  
Reading:  
*Second Treatise of Government*, pp. 7-30  
Homework 6 due by 1:00pm
- 2/2 Locke: Civil government  
Reading:  
*Second Treatise of Government*, pp. 42-68  
Homework 7 due by 1:00pm
- 2/4 Rousseau: Inequality and human nature  
Reading:  
*Discourse on Inequality*, pp. 14-42  
Homework 8 due by 1:00pm
- 2/9 Rousseau: The state of nature  
Reading:  
*Discourse on Inequality*, pp. 42-64  
Homework 9 due by 1:00pm
- 2/11 Rousseau: The emergence of political society  
Reading:  
*Discourse on Inequality*, pp. 65-85  
Homework 10 due by 1:00pm
- 2/16 Rousseau: Freedom, democracy, and the general will  
Reading:  
Frederick Neuhouser "Freedom, Dependence and the General Will" pp. 363-395 (on e-reserve)  
Homework 11 due by 1:00pm
- 2/18 Kant: Political society and the social contract

- Reading:  
 “On the Common Saying: That May be Correct in Theory” pp. 290-297 (on e-reserve)  
 Paper 1: 2/21 by 11:55 pm  
 Homework 12 due by 1:00pm
- 2/23 Berlin: Negative and positive liberty  
Reading:  
 Isaiah Berlin “Two Concepts of Liberty”, pp. 1-16, 22-36  
 Homework 13 due by 1:00pm
- 2/25 Dworkin: Liberalism and the good  
Reading:  
 Ronald Dworkin “Liberalism” from *A Matter of Principle* (Cambridge, Mass.: Harvard University Press, 1985) pp. 181-204, 408-409 (on electronic reserve)  
 Homework 14 due by 1:00pm
- 3/1 MacIntyre: The priority of the good  
Reading:  
 Alastair MacIntyre “The Privatization of Good” from *The Review of Politics*, Vol. 52. No. 3 (1990) pp. 344-361 (on electronic reserve)  
 Homework 15 due by 1:00pm
- 3/3 Mill: Liberalism, the harm principle and individuality  
Reading:  
 J. S. Mill “Introductory” and “Of Individuality” both excerpted from *On Liberty in The Basic Writings of John Stuart Mill*, (Modern Library, 2002), pp. 57-76; 3-16 (on electronic reserve)  
 Homework 16 due by 1:00pm
- 3/8 Spring break
- 3/10 Spring break
- 3/15 Rawls 1: The original position and the basic liberties  
Reading:  
 John Rawls “The Basic Liberties and their Priority” pp. 4-27 (on electronic reserve)  
 Homework 17 due by 1:00pm
- 3/17 Rawls 2: Liberty of conscience and the fair value of political liberties  
Reading:  
 John Rawls “The Basic Liberties and their Priority” pp. 27-46 (on electronic reserve)  
 Homework 18 due by 1:00pm
- 3/22 Sandel: A critique of liberalism  
Reading:  
 Michael Sandel “The Procedural Republic and the Unencumbered Self” from *Communitarianism and Individualism* edited by Avineri and de-Shalit (Oxford and New York: Oxford University Press, 1992) pp 12-28 (on electronic reserve)  
 Homework 19 due by 1:00pm
- 3/24 Jaeggi 1: Retrieving the insights of alienation critique  
Reading:

- Alienation*, Preface ix-xxi and pp. 1-10, 22-40  
Paper 2: 3/27 by 11:55 pm  
Homework 20 due by 1:00pm
- 3/29 Jaeggi 2: Alienation and rigidification  
Reading:  
*Alienation*, pp. 40-67
- 3/31 Jaeggi 3: Alienation and social roles  
Reading:  
*Alienation*, pp. 68-98  
Homework 21 due by 1:00pm
- 4/5 Jaeggi 4: Alienation and the freedom of the self  
Reading:  
*Alienation*, pp. 155-165, 199-220
- 4/7 Nozick 1: Libertarianism and justice  
Reading:  
Robert Nozick "Distributive Justice" pp. 45-61 (on electronic reserve)  
Homework 22 due by 1:00pm
- 4/12 Nozick  
Reading:  
Robert Nozick "Distributive Justice" pp. 63-78 (on electronic reserve)
- 4/14 Brown 1: Understanding neoliberalism  
Reading:  
*Undoing the Demos*, pp. 9-11, 17-45, 59-72  
Homework 23 due by 1:00pm
- 4/19 Brown 2: Neoliberalism and legal reason  
Reading:  
*Undoing the Demos*, pp. 79-99, 107-114, 151-173  
Homework 24 due by 1:00pm
- 4/21 Brown 3: Neoliberalism, education, and democracy  
*Undoing the Demos*, pp. 175-222
- 5/5 Take Home **Final Exam** due by 4:00pm via Moodle site

**T. J. Hinton**  
**thinton@ncsu.edu**  
**456 Withers Hall**  
**phone: 919.513.7941**

# REL/Hi 408/508: ISLAM IN THE MODERN WORLD

Anna Bigelow  
Office: Withers 429  
Phone: 515-6194  
Class Meeting: Winston 114

email: [anna\\_bigelow@ncsu.edu](mailto:anna_bigelow@ncsu.edu)  
Office Hours: 3-4 Tuesday & Thursday  
and by appointment (really... just ask)  
1:30-2:45 Tuesdays and Thursdays

## COURSE DESCRIPTION

This course on Modern Islam will track the history of Islam from the rise of the "modern" in the late 18<sup>th</sup> century until today. The course will explore the histories, individuals, movements, events, and expressive traditions that comprise the diverse world of global Islam. With more than a billion adherents worldwide we will study both the shared traditions and the regional and local formations of Muslim culture. The course begins with a historical survey, then we will focus on several key issues such as gender, justice, colonialism, orientalism, violence, reform and piety movements, and human rights. The last part of the course will be devoted to artistic and creative expressions such as literature, film, and the visual arts.

Catalog description: Evolution of modern Islam from 17th century to the present. Primary emphasis on North Africa, the Middle East and South Asia. Pre-modern Islamicate empires, reform and revival. Historical origins of current issues in the Islamic world.

## STUDENT LEARNING OUTCOMES

By the completion of this class student will be able to:

- Identify the major elements of Islam and understand the cultural contexts of the religion.
- Research and evaluate how Islam appears in the modern media and how media representations of Islam impact society.
- Read and critically evaluate often challenging primary and secondary texts from a variety of periods and places in recent Islamic history.
- Identify topics relating to Islam in the Modern World and analyze research materials relevant to those topics.
- Synthesize and compare the insights gained from the course materials and lectures and critically evaluate the relative merits of their argumentation, sources, and theories.

## REL/Hi 408 PREREQUISITES AND RESTRICTIONS

Prerequisite: upper level History or Religion course or permission of the instructor

This course satisfies:

- three hours of the six-hour GEP Humanities requirement <http://oucc.ncsu.edu/gep-humanities>
- the GEP Global Knowledge co-requisite <http://oucc.ncsu.edu/gep-gk-course>

## REL/Hi 508 PREREQUISITES AND RESTRICTIONS: Graduate standing

## TEXTS

- Bayoumi, Moustafa. *How Does It Feel to Be a Problem?: Being Young and Arab in America*. NY: Penguin, 2008.
- Esposito, John and John J. Donohue, editors. *Islam in Transition: Muslim Perspectives*. NY: OUP, 2007. \$44.95
- Hallaq, Wael. *An Introduction to Islamic Law*. Cambridge, UK: Cambridge University Press, 2009.
- Kamrava, Mehran. *New Voices of Islam: Rethinking Politics and Modernity*. Berkeley, CA: University of California Press, 2006.
- One of the following novels or memoirs to be reviewed in an essay **DUE December 2 in class**
  1. Mohja Kahf. *The Girl in the Tangerine Scarf*. PublicAffairs, 2006



2. Michael Muhammad Knight. *The Taqwacores*. Soft Skull Press 2009
3. Fatima Mernissi. *Dreams of Trespass*. Basic Books 1999
4. Nabil Saleh. *The Qadi and the Fortune Teller*. Northampton, MA: Interlink Books, 1996.
5. Tayeb Salih. *Season of Migration to the North*. Many editions
6. G. Willow Wilson. *The Butterfly Mosque*. NY: Grove Press, 2011.

## **COURSE SCHEDULE**

The reading assignments listed for a particular date and lesson must be read prior to that class, at least once. **Readings must be brought to class in some form.**

**IIT** = *Islam in Transition*

**New Voices** = *New Voices of Islam*

### **August 21: Introduction**

### **August 26: Approaching the Study of Islam**

Reading: Carl Ernst, "Approaching Islam in Terms of Religion," in *Following Muhammad: Rethinking Islam in the Contemporary World*. Chapel Hill, NC: UNC Press, 2003.

### **August 28: 18<sup>th</sup> & 19<sup>th</sup> Centuries**

Reading: John Voll, "Foundations for Renewal and Reform" in John Esposito, editor, *Oxford History of Islam*, (NY; Oxford University Press, 1999)

### **September 2: Colonialism**

Reading: S. V. R. Nasr, "European Colonialism," in John Esposito, editor, *Oxford History of Islam*, (New York; Oxford Univ. Press, 1999)  
Sir Sayyid Ahmad Khan, "India and English Government," **IIT**, pp. 32-35

### **September 4: Wahhabi Movement**

Reading: Natana Delong-Bas, "Muhammad ibn 'Abd al-Wahhab and the Origins of Wahhabism" in *Wahhabi Islam: From Revival and Reform to Global Jihad*. (London: I.B. Tauris, 2004).  
Khaled Abou El Fadl, "The Rise of the Early Puritans," in *The Great Theft: Wrestling Islam from the Extremists*. San Francisco: Harper Collins, 2005.

### **September 9: Independence Struggles**

Reading: Marshall Hodgson, "The Drive for Independence in the 20<sup>th</sup> Century" in *The Venture of Islam*, Volume 3, pp. 357-409

### **September 11: Reforming Islam**

Reading: Mehran Kamrava, "Introduction" in **New Voices**  
Jamal al Din al Afghani, **IIT** p. 13-19  
Muhammad Abduh, **IIT** 20-24  
'Ali 'Abd al-Raziq, **IIT** 24-31  
Sir Sayyid Ahmad Khan, **IIT** 35-38

### **September 16: Islam and Nationalism**

Reading: Rashid Rida, **IIT** 41-43  
Amir Shakib Arslan, **IIT** 44-48  
Sati' al Husri, **IIT** 49-53  
Taha Husayn, **IIT** 54-58  
Hasan al Banna, **IIT** 59-63

Muhammad Iqbal, **IIT** pp. 71-73

Maulana Maududi, **IIT** 74-77

- September 18:** **Islam and the State**  
Reading: Mu'ammār al Qadhafi, **IIT** 83-86  
Sadiq al-'Azm, **IIT** 93-99  
Sayyid Qutb, **IIT** 103-108  
Mushir ul-Haq, **IIT** 133-135  
Asghar Ali Engineer, **IIT** 136-142
- September 23:** **Tradition and Globalization**  
Reading: Mohammed Arkoun, Chapter Two, **New Voices** (pp. 29-64)
- September 25:** **TBA**
- September 30:** **Origins of Islamic Law**  
Reading: Wael Hallaq, Part One in *An Introduction to Islamic Law*. Cambridge, UK: Cambridge University Press, 2009. pp. 1-82
- October 2:** **Islamic Law Today**  
Reading: Hallaq, Part Two in *An Introduction to Islamic Law*, pp. 83-170
- October 5:** **PAPER ONE DUE – Profile paper (5 pm via Moodle)**
- October 7:** **Sharia – the Way**  
Reading: Tariq Ramadan, Chapter 3, **New Voices** (pp. 65-99)  
Subhi Mahmasani, **IIT**, pp. 145-150  
Ahmed Zaki Yamani, **IIT**, pp. 170-177  
Muhammad Sa'id al-'Ashmawi, **IIT**, pp. 178-183  
Fatwas, **IIT**, pp. 212-227
- October 9:** **FALL BREAK - NO CLASS**
- October 14:** **Islam and Democracy**  
Reading: Fethullah Gulen, Chapter 4, **New Voices** (99-104)  
Abdolkarim Soroush, Chapter 14, **New Voices** (243-262)
- October 16:** **TBA**
- October 21:** **Democracy and Governance**  
Reading: **IIT**, pp. 261-288, 307-340
- October 23:** **Freedom of Religion**  
Reading: Mohamed Talbi, Chapter 5, **New Voices** (105-118)  
Mohsen Kadivar, Chapter 6, **New Voices** (119-142)  
Muhammad Shahrour, Chapter 7, **New Voices** (143-152)
- October 28:** **Jihad**  
Reading: **IIT**, pp. 394-459, 460-472
- October 30:** **Gender Justice**

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Reading: Leila Ahmed, Chapter 9, **New Voices** (pp 177-200)  
Amina Wadud, Chapter 10, **New Voices** (pp. 201-204)  
Fatima Mernissi, Chapter 11, **New Voices** (pp. 205-212)  
**IIT**, pp. 157-202, 212-214

**November 4: Music**

Reading: Hisham Aidi, "Prologue" in *Rebel Music: Race, Empire, and the New Muslim Youth Culture*. NY: Pantheon Books, 2014.

**November 6: Ecology**

Reading: Seyyed Hossein Nasr, "Islam, the Contemporary Islamic World, and the Environmental Crisis"  
Fazlun Khalid, "Islam, Ecology, and Modernity: An Islamic Critique of the Root Causes of Environmental Degradation"

**November 11: Shi'ism**

Reading: Mehran Kamrava, "Iranian Shi'ism at the Gates of Historic Change" in *Innovation in Islam*, Mehran Kamrava, editor. Berkeley: UC Press, 2011.

**November 13: Sufism**

Reading: Carl Ernst, "Sufism in the Contemporary World" in *Shambhala Guide to Sufism*. Boston: Shambhala Press, 1997.  
Frances Trix, "'The Seeing of Our Eyes': An Albanian Sufi Baba" in Frances Trix, John Walbridge, and Linda Walbridge. *Muslim Voices and Lives in the Contemporary World*. NY: Palgrave Macmillan, 2008.

**November 16: PAPER TWO DUE – Issue paper (5 pm via Moodle)**

**November 18: Comic Relief**

Reading: Mucahit Bilici "Muslim Ethnic Comedy: Inversions of Islamophobia" in Andrew Shryock *Islamophobia/Islamophilia: Beyond the Politics of Enemy and Friend*. Bloomington, IN: Indiana University Press, 2010.  
Find a youtube clip of Islam related comedy and write a paragraph analysis

**November 20: Arab, Muslim, American**

Reading: Moustafa Bayoumi, *How Does it Feel to Be a Problem? Being Young and Arab in America*. NY: Penguin Books, 2008.

**November 25 & 27: Thanksgiving Break – no class**

**December 2: Contemporary Islamic Literature**

Reading: various, class discussions based on books chosen  
**Book Review of novels due in class**

**December 11: REL/HI 408 FINAL EXAM DUE, 5 pm; REL/HI 508 Research Paper due, 5 pm**

**REL/HI 408 COURSE GRADE**

Class Participation	15%
Attendance	5%
Paper One	20%

A+	97-100	C	73-76
A	93-96	C-	70-72
A-	90-92	D+	67-69

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Paper Two	20%
Book Review	20%
Final Exam	20%

B+	87-89	D	63-66
B	83-86	D-	60-62
B-	80-82	F	59 and below
C+	77-79		

**REL/HI 508 COURSE GRADE AND ADDITIONAL REQUIREMENTS**

Research Paper (30-35 pp)	40%
Annotated Bibliography	20%
Book Review	20%
Participation	15%
Attendance	5%

(Grade scale as for REL/HI 408)

- Additional content will be required of graduate students, to be determined in consultation with the student according to their disciplinary interests. For example, Master of International Studies students will be required to produce an annotated bibliography related to the region or the issue they are researching for the paper. This may involve evaluating policy briefs on terror networks, human rights reports, human development reports, or other appropriate materials. Similarly, Public History students might focus their bibliography and their paper on current research on visual culture in the Middle East (such as Christiane Gruber and Sune Haugbolle, editors, *Visual Culture in the Modern Middle East*, Indiana University Press, 2013) or on museum building in the Middle East (such as Yitzhak Reiter’s *Contesting Symbolic Landscape in Jerusalem: Jewish/Islamic Conflict over the Museum of Tolerance at Mamilla Cemetery*, Sussex Academic Press 2014)
- Graduate students will have at least three additional meetings, individually or if appropriate with all graduate students enrolled, to discuss research methods and projects. Grading of graduate students will also reflect a higher standard for all work, as appropriate.

**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. Do not take the course S/U if you are taking it to satisfy GEP requirements.

**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.

**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).

**ATTENDANCE, TARDINESS, and ATTENTIVENESS**

Attendance is mandatory and will be taken. 15% of your grade is based on participation, for which attendance is necessary. Unexcused absences will reduce your attendance grade by 5 points for each absence (subtracted from 100 for perfect attendance). Excused absences must be documented properly, including family deaths. Please refer to NCSU's institutional attendance policy, clearly defining excused absences: Please refer to NCSU's institutional attendance policy, clearly defining excused absences:

[http://www.ncsu.edu/policies/academic\\_affairs/pols\\_regs/REG205.00.4.php](http://www.ncsu.edu/policies/academic_affairs/pols_regs/REG205.00.4.php)

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Lateness to class is unacceptable and disruptive. Students arriving after attendance is taken will be marked late. Two late arrivals will be considered an absence from class. Students using computers for activities unrelated to class or cellphones/smartphones for any purpose will be marked absent.

### **CLASS PARTICIPATION**

This is the most important and most flexible part of your grade. Participation means that you come prepared to discuss any study questions about the works and subjects under discussion. If you have points to add, points of confusion, and points of interest, it is your responsibility to bring these to the class' attention. However, the classroom will be a space in which nobody's opinion, even mine, will be the only one accepted. It is essential that we deal with one another with respect and open minds in order to cultivate a positive classroom environment. Quantity and quality of participation will be evaluated using the following categories:

- A: Student is well prepared, attentive, always responds when called upon and volunteers often with pertinent answers or questions
- B: Student is usually prepared, responds when called on and volunteers on occasion
- C: Student shows evidence of being unprepared on occasion, has trouble when called on and does not volunteer often
- D: Student is unprepared, inattentive, never volunteers, or comes to class late
- F: Student exhibits a lack of concern for the class, sleeps in class, disturbs the class

### **LATE WORK**

Late work will be marked down five points per day. Extensions will only be granted in extreme extenuating circumstances, in line with NCSU's institutional attendance policy (see above).

### **ACADEMIC DISHONESTY**

The key to avoiding questions about academic integrity is to be certain that all your work is your own and that work that you cite is properly referenced. The simplest way to determine the boundary is to ask yourself whether the ideas you are expressing are your own or do they derive in whole or part from another work. If the latter is the case, then make a note of your source. When in doubt, ask! Be warned, I have had a fair amount of experience finding plagiarized work. I would much rather help you work on your own writing and research skills than read someone else's paper. For all work in this course, every student must abide by NCSU Honor Pledge ('I have neither given nor received unauthorized aid on this test or assignment'). All assignments and exams with your name on them are subject to this honor pledge. As the Student Code of Conduct stipulates, "Plagiarism and cheating are attacks on the very foundation of academic life, and cannot be tolerated within universities." Any suspected case will be turned over to the Student Judiciary Board for investigation. If you have any questions about what academic dishonesty is, check [http://www.ncsu.edu/policies/student\\_services/student\\_conduct/POI.445.00.1.htm](http://www.ncsu.edu/policies/student_services/student_conduct/POI.445.00.1.htm) or consult with me.

### **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, 515-7653. [http://www.ncsu.edu/provost/offices/affirm\\_action/dss/](http://www.ncsu.edu/provost/offices/affirm_action/dss/). <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>.

### **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).

**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.

### **H&SS 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 -- through ePACK at [ncsu.edu/epack](http://ncsu.edu/epack). Career Development Center -- [careers.ncsu.edu](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.]

**FYI for H&SS majors:**

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To assist students with academic questions, there will be advisors available Monday through Thursday from 9-4 and on Friday from 9-2 on a walk-in basis in Caldwell Lounge. They can advise on college and university policies, academic records, degree requirements, and university resources. Examples of areas they can discuss include: intracampus transfer, registration procedures, the General Education Program, and determining strategies to handle academic difficulty. Their expertise may be especially useful before and during registration times, and for newer freshmen and transfer students transitioning to life here at NC State.

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

This syllabus is designed in accord with the NCSU guidelines for course development, further information is available at:  
[http://www.chass.ncsu.edu/chass/multi-use/syllabus-univ\\_pol.html](http://www.chass.ncsu.edu/chass/multi-use/syllabus-univ_pol.html)