Professor Dan Greenberg  
Chair, Curriculum Committee  
College of Charleston

February 22, 2013

Dear Dan,

The Honors College Faculty Committee has worked with the Mathematics Department and Sociology/Anthropology Department to transition two special topics courses to regular course offerings. Please find enclosed the materials for your review.

For Hons 168: Honors Introduction to Archaeology
   --the completed new course form
   --a syllabus
   --a letter from Heath Hoffmann in support of the proposal

For Hons 216: Conceptual Tour of Contemporary Mathematics
   --the completed new course form
   --a syllabus
   --a cover letter from Jim Young in support of the proposal

Many thanks to your committee for the consideration of our proposal.

Sincerely,

Trisha Folds-Bennett
Dean of the Honors College
FACULTY CURRICULUM COMMITTEE
SIGNATURE PAGE

- In section A, list ALL of the forms covered by this signature page. If you submit a form that is not listed in A, your proposal will be held back until we receive a new, updated signature page.
- You must obtain the signature of your department chair and dean before submitting your proposal.

A. FORMS COVERED BY THIS SIGNATURE PAGE. List each form you are submitting—for instance, PSYC 383, Course Form; PSYC, Change of Major Form; PSYC, Change of Minor Form.

B. APPROVAL AND SIGNATURES.

1. Signature of Department Chair or Program Director:

   [Signature]
   Date: 2/22/13

2. Signature of Academic Dean:

   [Signature]
   Date: 2/21/12

3. Signature of Provost:

   [Signature]
   Date: 3/17/13

4. Signature of Business Affairs (only for course fees):

   [Signature]
   Date: ________________
   □ fee approved on __________
   □ BOT approval pending

5. Signature of Curriculum Committee Chair:

   [Signature]
   Date: ________________

6. Signature of Budget Committee Chair (only for new programs):

   [Signature]
   Date: ________________

7. Signature of Academic Planning Committee Chair (only for new programs):

   [Signature]
   Date: ________________

8. Signature of Faculty Senate Secretary:

   [Signature]
   Date: ________________

Date Approved by Faculty Senate: ________________
FACULTY CURRICULUM COMMITTEE

COURSE FORM

Instructions:
- Please fill out one of these forms for each course you are adding, changing, deactivating, or reactivating.
- Fill out the parts of the form specified in part B. You must do this before your request can move forward!
- Remember that your changes will not be implemented until the next catalog year at the earliest.
- If you have questions, start by checking the instructions on the website. Please feel free to contact the committee chairs with any remaining questions you might have.

A. CONTACT/COURSE INFORMATION.

Name: Trish Folds-Bennett  Phone: 953-7154  Email: FoldsBennettT@cofc.edu
Department or Program: Honors/SOCYANTH  School: Humanities and Social Sciences and Honors College
Subject Acronym and Course Number: HONS 168: Honors Introduction to Archaeology

B. TYPE OF REQUEST. Please check all that apply, then fill out the specified parts of the form.

☑ Add a New Course (complete parts C, D, F, G, H, I, J, K)
☐ Change Part of an Existing Course (complete parts C, D, E, F, G, I, J, K)
  ☐ Course Number
  ☐ Course Name
  ☐ Course Description
  ☐ Credit/Contact Hours
  ☐ Restrictions (prerequisites, co-requisites, junior/senior standing, etc.)
☐ Deactivate an Existing Course (complete parts C, D, E, G, I, J, K)
☐ Reactivate a Previously-Deactivated Course (complete parts C, D, E, G, I, J, K)

C. RATIONALE AND EXPLANATION. Please describe your request and explain why you are making it.

This course has been taught several times as a special topics course in the Honors College; we would like to make it a catalog course.

D. IMPACT ON EXISTING PROGRAMS AND COURSES. Please briefly describe the impact of your request on other programs and courses. If another program requires the course, you must submit their written acknowledgement with this proposal. Also, the affected program must describe any change in the number of credit hours they require. Include a list of similar courses in other departments and explain any overlap.

Honors Archaeology is typically offered once each academic year (either fall or spring) at the discretion of the Department of Sociology and Anthropology. We expect no specific impact on other programs and courses outside of the continuing relationship with the Department to offer this course on a regular basis.
EXISTING COURSE INFORMATION. If you are proposing a new course, just leave this blank. Otherwise, please fill out all fields.

Department: School: Subject Acronym: Course Number:

Credit hours: _lecture _ lab _ seminar _ independent study
Contact hours: _lecture _ lab _ seminar _ independent study

Course title:

Course description (maximum 50 words, exactly as it appears in the catalog):

Restrictions (pre-requisites, co-requisites, majors only, etc.):

Cross-listing, if any: NA.

Is this course repeatable? □ yes □ no If yes, how many total credit hours may the student earn? _____

E. NEW COURSE INFORMATION. If you are deactivating a course, leave this blank. Otherwise, please fill out all fields. For changed courses, use boldface for the information that is changing.

Department: SOCYANTH/Honors School: HSS/Honors Subject Acronym: HONS Course Number: 168

Credit hours: _lecture _ lab _3_ seminar _ independent study
Contact hours: _lecture _ lab _3_ seminar _ independent study

Course title: Honors Introduction to Archeology

Course description (maximum 50 words, exactly as it appears in the catalog):
This course introduces students to the study of past cultures through their material remains. Examines theories and methods used in archaeology for reconstructing, interpreting, and preserving the past. Students will use this knowledge to understand how archaeologists interpret the archaeological record to understand past human behavior and societies.

Restrictions (pre-requisites, co-requisites, majors only, etc.): None

Cross-listing, if any (submit approval from relevant department):

Is this course repeatable? □ yes □ no If yes, how many total credit hours may the student earn? _____

Is there an activity, lab, or other fee associated with this course? □ yes □ no What is the fee? $_____

Note: The Senate cannot approve new fees; Business Affairs will submit any such request to the Board of Trustees. The course can still be created, but the fee will not be attached until the Board has approved it.

If this is a newly-created course, is it intended to be the equivalent of an existing course? □ yes □ no
If so, which course? ________

Note: You must deactivate that course by submitting an additional Course Form.
F. COSTS. List all of the new costs or cost savings (including new faculty/staff requests, library, equipment, etc.) associated with your request.

There are no new costs that accompany this course.

H. STUDENT LEARNING OUTCOMES AND ASSESSMENT.

<table>
<thead>
<tr>
<th>Student Learning Outcomes</th>
<th>Assessment Method and Performance Expected</th>
</tr>
</thead>
<tbody>
<tr>
<td>What will students know and be able to do when they complete the course?</td>
<td>How will each outcome be measured? Who will be assessed, when, and how often? How well should students be able to do on the assessment?</td>
</tr>
<tr>
<td>1. Students can decipher archaeological methods appropriate to a site to recover the information (i.e., artifacts) archaeologists use to interpret the past.</td>
<td>A take home writing assignment or final exam essay will be used to assess this outcome. Students enrolled in HONS 168 and ANTH 202 will be assessed on a 2-3 year cycle as part of the Anthropology program assessment. 70% of students should meet or exceed expectations on a departmental rubric created for this assessment.</td>
</tr>
<tr>
<td>2. Students can decipher archaeological methods appropriate to an era to recover the information (i.e., artifacts) archaeologists use to interpret the past.</td>
<td>A take home writing assignment or final exam essay will be used to assess this outcome. Students enrolled in HONS 168 and ANTH 202 will be assessed on a 2-3 year cycle as part of the Anthropology program assessment. 70% of students should meet or exceed expectations on a departmental rubric created for this assessment.</td>
</tr>
<tr>
<td>3. Students can apply what it means to be “stewards of the past,” a central obligation of archaeologists, to historical and contemporary case studies.</td>
<td>A take home writing assignment or final exam essay will be used to assess this outcome. Students enrolled in HONS 168 and ANTH 202 will be assessed on a 2-3 year cycle as part of the Anthropology program assessment. 70% of students should meet or exceed expectations on a departmental rubric created for this assessment.</td>
</tr>
<tr>
<td>4. Students can apply social science concepts, models or theories to explain human behavior, social interactions or social institutions</td>
<td>Assess through take-home writing assignment or in-class or take-home final exam question. Students enrolled in HONS 168 and ANTH 202 as part of Gen Ed assessment of Social Science. 80% of students should “Meet” or “Exceed Expectations” using the established Gen Ed rubric for the Social Sciences Gen Ed requirement.</td>
</tr>
</tbody>
</table>
How does this course align with the student learning outcomes articulated for the major, program, or general education? What program-level outcome or outcomes does it support? Is the content or skill introduced, reinforced, or demonstrated in this course?

A central program-level student learning outcome for the Anthropology major is that students be able to demonstrate an understanding of the various methods of anthropological inquiry. Archaeology is one method of anthropological inquiry that embodies a range of methodological approaches. Thus, HONS168 supports this program-level learning outcome. Finally, HONS168 heavily emphasizes archaeological methods of inquiry throughout the course, giving students opportunities to analyze and interpret archaeological artifacts which reinforces the primacy of the methodological pursuit.

I. PROGRAM CHANGES. Will this course be added to the existing degree requirements or list of approved electives of a major, minor, or concentration? If so, please explain briefly and attach a Change Minor and/or Change Major/Program Form as appropriate.

Yes. HONS 168 will be allowed to satisfy the requirements of the Anthropology major and minor. Currently, ANTH 202: Introduction to Archaeology is required for the Anthropology major and ANTH 202 is an elective for the Anthropology minor. Honors students who successfully complete HONS 168 will be allowed to have the course count toward the Anthropology major or minor, if they pursue a major or minor in Anthropology.

Change of Major and Change of Minor forms have been submitted separately from the Department of Sociology and Anthropology.

J. CHECKLIST.

☐ I have completed all relevant parts of the form.

☐ I have attached a cover letter that describes my request and lists all the documents I am submitting.

☒ (For new courses only) I have attached a syllabus.

☒ (For courses used in any way by other departments, including cross-listing) I have attached an acknowledgement from the relevant department.

☒ (For courses intended to fulfill a Gen Ed requirement) I have submitted the proposal to the Gen Ed committee.

☐ I have submitted one Signature Form that lists all of the different forms I am submitting.
HONS168- INTRODUCCION TO ARCHAEOLOGY FALL 2011

Description
The course, Introduction to Archaeology, is designed as a mid-level course exploring the methods within the discipline. The student will have the unique opportunity to work in small groups with instructor supervision and learn archaeological methodology through direct work with real data and archaeological materials. The course involves a series of lectures and readings, coupled with laboratories that involve hands-on gathering and interpretation of archaeological data. The student will be introduced to the key analytical methods including mapping, lithic analysis, microscopic functional analysis, ceramic analysis, faunal analysis and methods in environmental reconstruction. They will use this knowledge to understand how archaeologists make interpretations of the archaeological record to tease out a picture of past human societies. While some material will be presented in lecture form to introduce basic concepts, the majority of the course will be taught in seminar style with focused discussions and debates around the article readings. There is no text assigned for the course, rather all readings will be taken from articles written by scholars on the subject.

Instructor
Dr. Maureen A. Hays
Office - 19 St Philip St Room 201
Phone - 953-6597 E-mail - haysm@cofc.edu
Office Hours - MWF 9:30-10:30 & by appointment

Social Science General Education Requirement: ANTH 202 is one of the approved courses that will satisfy the 6 credits of social science that you are required to complete for the General Education curriculum.

Learning Outcome for the Social Sciences in the General Education Curriculum: Students can apply social science concepts, models or theories to explain human behavior, social interactions or social institutions.

How and When this Learning Outcome will be Assessed: Near the end of the semester, you will be asked to complete a take-home writing in which you study the scholarly research on an archaeological site of your choosing. You will then write a 4-5 page paper that challenges you to:
- Provide a synopsis of an anthropological theory, archaeological method and/or concept and how it is illustrated by the information you uncovered
- And, based on the artifacts from the archaeological site you researched, explain how the artifacts describe, provide an interpretation of, or predict human behavior, social interactions or social institutions.

Course Texts
Daily Readings - These can be found as PDFs on OAKS
Articles and Labs - These can be found as PDFs on OAKS.

Grading
Midterm 20%
Final Cumulative 30%
Class Participation/Preparation 20%
5 Article Summaries 15% (5 x 3%)
Final Assignment 15%

Exams 50%
Exam Schedule
20% Midterm- Monday, October 3 - Objective/Short Essay
30% Final- Wednesday, October 5 - Synthetic Interpretive Essay
Wednesday, December 14 12:00-3:00
Labs
Labs are scheduled to coincide with lecture material. They are designed to give students hands on experience in basic analytical methods in archaeology. Students must be in attendance for labs. There will be no lab make-ups. Labs materials can be found on OAKS as PDF files.

Class Participation/Preparation 20% Due: Daily
Students will be expected to actively participate in class discussions and group activities. To actively participate, you will need to bring detailed notes and/or copies of the reading
For each reading you will be expected to prepare an outline/notes to be used in discussion. This assignment will facilitate discussions and provide the instructor with a means of evaluating student comprehension of the assigned readings.
The outlines/notes must be typed and turned in at the end of class.

Article Summaries 15% (5 @ 3%)
Five articles from professional journals are assigned to coincide with the lectures and text materials. The articles can be found on OAKS as PDF files. The summaries should be submitted through OAKS Dropbox and are due before class discussion. They will not be accepted late.
In summarizing the article please be sure to answer the following
What is the hypothesis or topic of research?
What are the methods used?
What are the conclusions?

Final Assignment 15%
Due: Last Day of Class - December 5
This assignment can be found on OAKS and will be submitted through Dropbox.

Attendance Policy
Attendance will be taken every day. More than 5 absences will result in lowering of the final grade by one letter grade. 10 unexcused absences will be considered excessive, and will result in a WA for the course (quality points equivalent to an F).

Make-Up Policy
Make-up or advance exams will be considered in extreme circumstances and may require an official excuse from the Dean of Undergraduate Studies (missing the final will require an excuse from the Dean)

Grade Scale
I do not discuss grades via e-mail. This is for your own protection. Your grades are private (yes, even form your parents) and protected by the Family Education Right to Privacy Act (the Buckley Amendment).

<table>
<thead>
<tr>
<th>Grade</th>
<th>87-89</th>
<th>77-79</th>
<th>67-69</th>
<th>0-59</th>
<th>F</th>
</tr>
</thead>
<tbody>
<tr>
<td>93-100 A</td>
<td>83-86</td>
<td>B</td>
<td>73-76</td>
<td>63-66</td>
<td>WA excessive absences quality pts</td>
</tr>
<tr>
<td>90-92 A-</td>
<td>80-82</td>
<td>B-</td>
<td>70-72</td>
<td>60-62</td>
<td>XF Honor Code violation quality pts</td>
</tr>
</tbody>
</table>

Honor Code
The College of Charleston's policy regarding Honor Code violations states the following:
The Honor Code specifically forbids lying, cheating, attempted cheating, stealing, attempted stealing and plagiarism. Students at the College are bound by honor and by their acceptance of admission to the College to abide by the Code and to report violations.
Students can find the complete Honor Code and all related processes in the Student Handbook at http://www.cofc.edu/generaldocuments/handbook.pdf
Reading and homework are due the day it is listed. Schedule is always subject to change.

<table>
<thead>
<tr>
<th>LECTURE TOPIC</th>
<th>READING/HOMEWORK DUE</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>WEEK 1</strong></td>
<td><strong>AUGUST 22-26</strong></td>
</tr>
<tr>
<td>W Introduction - What is Anthropology?</td>
<td>No reading</td>
</tr>
<tr>
<td><strong>WEEK 2</strong></td>
<td><strong>AUGUST 29-SEPTEMBER 2</strong></td>
</tr>
<tr>
<td>M What is Archaeology? Archaeological Questions</td>
<td>An Introduction to Archaeology Archaeological Questions</td>
</tr>
<tr>
<td>W Archaeological Research</td>
<td>The Archaeological Record</td>
</tr>
<tr>
<td><strong>WEEK 3</strong></td>
<td><strong>SEPTEMBER 5-9</strong></td>
</tr>
<tr>
<td>M Archaeological Excavation</td>
<td>Fieldwork</td>
</tr>
<tr>
<td>W Lab 1: Interpreting Archaeological Maps</td>
<td>Lab 1 - PRINT FOR CLASS</td>
</tr>
<tr>
<td><strong>WEEK 4</strong></td>
<td><strong>SEPTEMBER 12-16</strong></td>
</tr>
<tr>
<td>M Go over Lab 1 Dating Techniques</td>
<td>DATING</td>
</tr>
<tr>
<td>W Dating Techniques</td>
<td>DATING</td>
</tr>
<tr>
<td><strong>WEEK 5</strong></td>
<td><strong>SEPTEMBER 19-23</strong></td>
</tr>
<tr>
<td>M Paleoethnobotany</td>
<td>Archaeobotany</td>
</tr>
<tr>
<td>W Lab 2: Paleoethnobotanical Analysis</td>
<td>LAB 2 - PRINT FOR CLASS</td>
</tr>
<tr>
<td><strong>WEEK 6</strong></td>
<td><strong>SEPTEMBER 26-30</strong></td>
</tr>
<tr>
<td>M Go over Lab 2 Faunal Analysis</td>
<td>Archaeozoology</td>
</tr>
<tr>
<td>W Faunal Analysis</td>
<td>Archaeozoology</td>
</tr>
<tr>
<td>Article 1 Discussion - 1994 Morey, Davcey F. The early evolution of the domestic dog. American Scientist</td>
<td>DUE: SUMMARY 1</td>
</tr>
<tr>
<td>Talk about expectations for Midterm</td>
<td></td>
</tr>
<tr>
<td><strong>WEEK 7</strong></td>
<td><strong>OCTOBER 3-7</strong></td>
</tr>
<tr>
<td>M MIDTERM EXAM - PART I OBJECTIVE/SHORT ESSAY</td>
<td></td>
</tr>
<tr>
<td>W MIDTERM EXAM - PART II SYNTHETIC INTERPRETIVE ESSAY</td>
<td></td>
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<tr>
<td><strong>WEEK 8</strong></td>
<td><strong>OCTOBER 10-14</strong></td>
</tr>
<tr>
<td>M Video: Ice Man</td>
<td></td>
</tr>
<tr>
<td>W Go over Midterm</td>
<td></td>
</tr>
<tr>
<td>Lab 3: Owl Pellets Analysis</td>
<td>LAB 3 - PRINT FOR CLASS</td>
</tr>
<tr>
<td><strong>WEEK 9</strong></td>
<td><strong>OCTOBER 17-21</strong></td>
</tr>
<tr>
<td>M: Fall Break - No Class</td>
<td></td>
</tr>
<tr>
<td>W Geoarchaeology</td>
<td>Geoarchaeology</td>
</tr>
<tr>
<td><strong>WEEK 10</strong></td>
<td><strong>OCTOBER 24-28</strong></td>
</tr>
<tr>
<td>M Geoarchaeology</td>
<td>Geoarchaeology</td>
</tr>
<tr>
<td>Article 2 Discussion - 2006 P Goldberg and S. Sherwood Deciphering Human Prehistory Through the Geoarchaeological Study of Cave Sediments. Evolutionary Anthropology 15:20 –36.</td>
<td>DUE: SUMMARY 2</td>
</tr>
<tr>
<td>W Video: Making Stone Tools</td>
<td></td>
</tr>
<tr>
<td>Week 11</td>
<td>October 31 - November 4</td>
</tr>
<tr>
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</tr>
<tr>
<td>M</td>
<td>Lithic Analysis</td>
</tr>
<tr>
<td>W:</td>
<td>Attending Southeaster Archaeology Conference - No Class</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Week 12</th>
<th>November 7-11</th>
</tr>
</thead>
<tbody>
<tr>
<td>M</td>
<td>Lithic Analysis</td>
</tr>
<tr>
<td>W</td>
<td>Lab 4: Lithic Analysis</td>
</tr>
<tr>
<td></td>
<td>LAB 4 - PRINT FOR CLASS</td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>Week 13</th>
<th>November 14-18</th>
</tr>
</thead>
<tbody>
<tr>
<td>M</td>
<td>Go over Lab 4</td>
</tr>
<tr>
<td>W</td>
<td>Ceramic Analysis</td>
</tr>
<tr>
<td></td>
<td>Ceramic Analysis</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Week 14</th>
<th>November 21-25</th>
</tr>
</thead>
<tbody>
<tr>
<td>M</td>
<td>Cultural Resource Management</td>
</tr>
<tr>
<td>W</td>
<td>Thanksgiving - No Class</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Week 15</th>
<th>November 28 - December 2</th>
</tr>
</thead>
<tbody>
<tr>
<td>M</td>
<td>Video: Bones of Contention 49 min #3164</td>
</tr>
<tr>
<td>W</td>
<td>Cultural Resource Management: NAGPRA Discussion will take the form of a debate DUE: SUMMARY 4 and 5</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Week 16</th>
<th>December 5</th>
</tr>
</thead>
<tbody>
<tr>
<td>M</td>
<td>Catch up</td>
</tr>
<tr>
<td></td>
<td>Discuss Expectations Exam II</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Week 16</th>
<th>December 5</th>
</tr>
</thead>
<tbody>
<tr>
<td>M</td>
<td>Catch up</td>
</tr>
<tr>
<td></td>
<td>DUE: FINAL ASSIGNMENT</td>
</tr>
</tbody>
</table>
February 14, 2013

Dr. Trisha Folds-Bennett
Dean, Honors College
College of Charleston
66 George Street
Charleston, SC 29424

Dear Dean Folds-Bennett,

I am writing to state by unconditional support for the new course you are proposing, HONS 168: Honors Introduction to Archaeology. It is always a pleasure for our faculty to teach in the Honors College. Given that our faculty have taught Introduction to Archaeology in the Honors College twice before, it makes sense that we regularize the course in light of the positive response from your students.

Sincerely,

Heath C. Hoffmann
Chair, Department of Sociology and Anthropology
Associate Professor of Sociology
### FACULTY CURRICULUM COMMITTEE
### SIGNATURE PAGE

- In section A, list ALL of the forms covered by this signature page. If you submit a form that is not listed in A, your proposal will be held back until we receive a new, updated signature page.
- You must obtain the signature of your department chair and dean before submitting your proposal.

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List each form you are submitting—for instance, PSYC 383, Course Form; PSYC, Change of Major Form; PSYC, Change of Minor Form.

### B. APPROVAL AND SIGNATURES.

1. Signature of Department Chair or Program Director:
   
   [Signature]
   
   Date: 2-21-13

2. Signature of Academic Dean:
   
   [Signature]
   
   Date: 2-21-13

3. Signature of Provost:
   
   [Signature]
   
   Date: 3/7/13

4. Signature of Business Affairs (only for course fees):
   
   [Signature]
   
   Date: ________________
   
   [□] fee approved on ________________
   
   [□] BOT approval pending

5. Signature of Curriculum Committee Chair:
   
   [Signature]
   
   Date: ________________

6. Signature of Budget Committee Chair (only for new programs):
   
   [Signature]
   
   Date: ________________

7. Signature of Academic Planning Committee Chair (only for new programs):
   
   [Signature]
   
   Date: ________________

8. Signature of Faculty Senate Secretary:
   
   [Signature]
   
   Date: ________________

Date Approved by Faculty Senate: ________________
Cover letter accompanying New Course Proposal

HONS 216 Conceptual Tour of Contemporary Mathematics

November 13, 2012

Please consider this New Course Proposal for HONS 216, Conceptual Tour of Contemporary Mathematics. This honors course has been taught as a special topics honors course every spring semester since Spring 2003 semester, sometimes running two sections. It is a very popular and successful course among our honors students. The reason for this New Course Proposal is to have this course listed permanently in the catalog. The original Honors Course Proposal will be made available upon request.

Attached are the

1. FACULTY CURRICULUM COMMITTEE COURSE FORM
2. Syllabus for the proposed course
3. Instruction sheet for the final class project assignment.

If you have any questions, comments, or need additional information, please contact me.

Sincerely,

James E Young
Department of Mathematics
College of Charleston

youngj@cofc.edu
843 953 7295
FACULTY CURRICULUM COMMITTEE
COURSE FORM

Instructions:
- Please fill out one of these forms for each course you are adding, changing, deactivating, or reactivating.
- Fill out the parts of the form specified in part B. You must do this before your request can move forward!
- Remember that your changes will not be implemented until the next catalog year at the earliest.
- If you have questions, please start by checking the instructions on the website. Please feel free to contact the committee chairs with any remaining questions you might have.

A. CONTACT INFORMATION.

Name: Jim Young Phone: 953 7295 Email: youngj@cofc.edu

Department or Program: Mathematics School: Sciences and Mathematics

B. TYPE OF REQUEST. Please check all that apply, then fill out the specified parts of the form.

☐ Add a New Course (complete parts C, D, F, G, H, I, J, K)
☐ Change Part of an Existing Course (complete parts C, D, E, F, G, I, J, K)
   ☐ Course Number
   ☐ Course Name
   ☐ Course Description
   ☐ Credit/Contact Hours
   ☐ Restrictions (prerequisites, co-requisites, junior/senior standing, etc.)
☐ Deactivate an Existing Course (complete parts C, D, E, G, I, J, K)
☐ Reactivate a Previously-Deactivated Course (complete parts C, D, E, G, I, J, K)

C. RATIONALE AND EXPLANATION. Please describe your request and explain why you are making it.

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D. IMPACT ON EXISTING PROGRAMS AND COURSES. Please briefly describe the impact of your request on other programs and courses. If another program requires the course, you must submit their written acknowledgement with this proposal. Also, the affected program must describe any change in the number of credit hours they require. Include a list of similar courses in other departments and explain any overlap.

There is no impact on other programs or courses.
E. EXISTING COURSE INFORMATION. If you are proposing a new course, just leave this blank. Otherwise, please fill out all fields.

Department: ___________________________ School: ___________________________ Subject Acronym: ___________________________ Course number: ___________________________

Credit hours: _____ lecture _____ lab _____ seminar _____ independent study
Contact hours: _____ lecture _____ lab _____ seminar _____ independent study

Course title: ___________________________

Course description (maximum 50 words, exactly as it appears in the catalog):

Restrictions (pre-requisites, co-requisites, majors only, etc.):

Cross-listing, if any:

Is this course repeatable? □ yes □ no If yes, how many total credit hours may the student earn? _____

F. NEW COURSE INFORMATION. If you are deactivating a course, leave this blank. Otherwise, please fill out all fields. For changed courses, use boldface for the information that is changing.

Department: Honors School: Honors Subject Acronym: HONS Course Number: 216

Credit hours: 3 lecture _____ lab _____ seminar _____ independent study
Contact hours: 2.5 lecture _____ lab _____ seminar _____ independent study

Course title: Conceptual Tour of Contemporary Mathematics

Course description (maximum 50 words, exactly as it appears in the catalog):

This course will highlight mathematics as a network of intriguing and powerful ideas, not a dry formula list of techniques. Emphasis will be placed on conceptual, non-technical understanding of current developments in higher-level mathematics, and how these concepts and results are intertwined and employed in other areas outside mathematics.

Restrictions (pre-requisites, co-requisites, majors only, etc.):

Pre-requisite: MATH 105 or MATH 120 or equivalent; or permission of instructor

Cross-listing, if any (submit approval from relevant department):

Is this course repeatable? □ yes □ no If yes, how many total credit hours may the student earn? _____

Is there an activity, lab, or other fee associated with this course? □ yes □ no
Note: All fees require approval from the Board of Trustees.

If this is a newly-created course, is it intended to be the equivalent of an existing course? □ yes  □ no
If so, which course? _______________ Note: You must deactivate the course by submitting an additional Course Form.

G. COSTS. List all of the new costs or cost savings (including new faculty/staff requests, library, equipment, etc.)
associated with your request.

No new costs or cost savings.

H. STUDENT LEARNING OUTCOMES AND ASSESSMENT.

<table>
<thead>
<tr>
<th>Student Learning Outcomes</th>
<th>Assessment Method and Performance Expected</th>
</tr>
</thead>
<tbody>
<tr>
<td>What will students know and be able to do when they complete the course?</td>
<td>How will each outcome be measured? Who will be assessed, when, and how often? How well should students be able to do on the assessment?</td>
</tr>
<tr>
<td>1. The ambitious goal of this course is to help each student discover the beauty and fascination of mathematics, admire its strength and profound ideas, and appreciate its value in our everyday lives. Topics to be covered include key ideas in algebra, number theory, mathematical foundations and logic, complexity, topology and geometry, stochastics, and dynamics.</td>
<td>I assign substantial of homework weekly, and students should expect to spend 8-10 hours per week outside of class mastering the concepts and writing up the homework exercises. In addition, a final team (2-3 students per team) project will be due at the end of the semester requiring approximately 10-15 hours per student for research, reading, and finalizing of project. Students will learn the appropriate concepts and skills necessary to perform well on all homework and project assignments. Attendance in this course is paramount and graded as material and concepts covered in class will be new to most students and may be difficult to replicate in books or notes. Students will be encouraged and expected to actively participate in class, including presenting at the blackboard. Each class begins with addressing questions from previous lectures, readings, and homework exercises. Students will have the first opportunity to answer questions, deferring to the Instructor as necessary for assistance, clarification, or confirmation. After questions have been adequately addressed, Instructor will lecture on the day’s material leaving time towards the end of class for students to breakout into groups to work on and discuss an exercise or topic relevant to lecture. Class will end with each group briefly offering their insight and approach to the exercise.</td>
</tr>
</tbody>
</table>

2. |

3. |

4. |
How does this course align with the student learning outcomes articulated for the major, program, or general education? What program-level outcome or outcomes does it support? Is the content or skill introduced, reinforced, or demonstrated in this course?

The approach, philosophy, and content of this course require a student who is deeply curious about the wealth of ideas shaping our modern-day world, and who is equipped with a sharp and ready mind for understanding and appreciating abstract concepts of contemporary mathematics. Honors students should ideally have these qualities, and their quest for knowledge will certainly be fulfilled and strengthened by actively participating in the novel discoveries awaiting them in this proposed course. Furthermore, it meets the requirements of an Honors Course insofar as it covers topics not addressed in general curriculum classes, it asks students to fit abstract concepts into a broader conceptual framework, and it requires regular class participation.

I. PROGRAM CHANGES. Will this course be added to the existing degree requirements or list of approved electives of a major, minor, or concentration? If so, please explain briefly and attach a Change Minor or Change Major/Program Form as appropriate.

No.

J. CHECKLIST.

☑ I have completed all relevant parts of the form.

☑ I have attached a cover letter that describes my request and lists all the documents I am submitting.

☑ (For new courses only) I have attached a syllabus.

☑ (For courses used in any way by other departments, including cross-listing) I have attached an acknowledgement from the relevant department.

☑ (For courses intended to fulfill a Gen Ed requirement) I have submitted the proposal to the Gen Ed committee.

K. APPROVAL AND SIGNATURES.

1. Signature of Department Chair or Program Director:

_________________________________________ Date: __________________________

2. Signature of Academic Dean:

_________________________________________ Date: __________________________

3. Signature of Provost:

4. Signature of Curriculum Committee Chair:

Date: ________________

5. Signature of Faculty Senate Secretary:

Date: ________________

Date Approved by Faculty Senate: ________________
CONCEPTUAL TOUR OF CONTEMPORARY MATHEMATICS
HONORS 216
SPRING 2012

Instructor: James E. Young
Office: RSS 323
Phone: 953-7295
E-mail: youngi@cofc.edu

Office Hours: Tue and Thu 12:15 – 1:45


Grading:

Homework (due bi-weekly) (35%)
Project (due May 1) (35%)
Attendance (20%)
Class Participation (10%)

Grade Scale:

A  90 – 100
B  80 – 89
C  70 – 79
D  60 – 69
F  0 – 59

Drop Date: March 19. Last day to withdraw with a grade of “W”. 
<table>
<thead>
<tr>
<th>Date</th>
<th>Topics</th>
<th>Text Sections</th>
</tr>
</thead>
<tbody>
<tr>
<td>1/10</td>
<td>Introduction, motivation, and course overview</td>
<td>1.1-1.4, notes</td>
</tr>
<tr>
<td>1/12</td>
<td>Numbers: distribution of primes and prime number theorem</td>
<td>2.1, 2.3, notes</td>
</tr>
<tr>
<td>1/17</td>
<td>Numbers: distribution of primes and Riemann Hypothesis</td>
<td>class notes</td>
</tr>
<tr>
<td>1/19</td>
<td>Numbers: rational versus irrational</td>
<td>2.6, 2.7, notes</td>
</tr>
<tr>
<td>1/24</td>
<td>Numbers: algebraic versus transcendental</td>
<td>class notes</td>
</tr>
<tr>
<td>1/26</td>
<td>Topology and Geometry: euclidean versus non-euclidean</td>
<td>4.1, 4.6, notes</td>
</tr>
<tr>
<td>1/31</td>
<td>Topology and Geometry: manifolds and Poincaré conjecture</td>
<td>5.1-2, 5.6, notes</td>
</tr>
<tr>
<td>2/2</td>
<td>Topology and Geometry: topological invariants and Euler characteristic</td>
<td>5.4, notes</td>
</tr>
<tr>
<td>2/7</td>
<td>Topology and Geometry: knots and links</td>
<td>5.5, notes</td>
</tr>
<tr>
<td>2/9</td>
<td>Dynamics: one-dimensional dynamics and Sarkovskii’s theorem</td>
<td>6.5, 6.6, notes</td>
</tr>
<tr>
<td>2/14</td>
<td>Dynamics: period-doubling and Feigenbaum universality</td>
<td>6.5, 6.6, notes</td>
</tr>
<tr>
<td>2/16</td>
<td>Dynamics: complex dynamics and Julia and Mandlebrot sets</td>
<td>6.1, 6.4, notes</td>
</tr>
<tr>
<td>2/21</td>
<td>Dynamics: symbolic dynamics and cellular automata</td>
<td>6.5, notes</td>
</tr>
<tr>
<td>2/23</td>
<td>Dynamics: chaos and strange attractors</td>
<td>6.2, 6.6, notes</td>
</tr>
<tr>
<td>2/28</td>
<td>Stochastics: laws of probability</td>
<td>7.1-2, 7.4, notes</td>
</tr>
<tr>
<td>3/1</td>
<td>Stochastics: law of large numbers and central limit theorem</td>
<td>7.2, 9.1, notes</td>
</tr>
<tr>
<td>3/6</td>
<td><strong>Spring Break</strong></td>
<td></td>
</tr>
<tr>
<td>3/8</td>
<td><strong>Spring Break</strong></td>
<td></td>
</tr>
<tr>
<td>3/13</td>
<td>Stochastics: Borel-Cantelli and Kolmogorov 0-1 laws</td>
<td>7.3, notes</td>
</tr>
<tr>
<td>3/15</td>
<td>Stochastics: random walks and Brownian motion</td>
<td>7.3, notes</td>
</tr>
<tr>
<td>3/20</td>
<td>Complexity: computability and the Church-Turing thesis</td>
<td>class notes</td>
</tr>
<tr>
<td>3/22</td>
<td>Complexity: P = NP question</td>
<td>class notes</td>
</tr>
<tr>
<td>3/27</td>
<td>Complexity: Chaitin’s halting probability and its secrets</td>
<td>class notes</td>
</tr>
<tr>
<td>3/29</td>
<td>Complexity: promises of quantum computation</td>
<td>class notes</td>
</tr>
<tr>
<td>4/3</td>
<td>Logic and Foundations: completeness of first-order predicate logic</td>
<td>class notes</td>
</tr>
<tr>
<td>4/5</td>
<td>Logic and Foundations: Gödel’s incompleteness theorems</td>
<td>class notes</td>
</tr>
<tr>
<td>4/10</td>
<td>Logic and Foundations: set theory and higher infinities</td>
<td>3.1-3.5, notes</td>
</tr>
<tr>
<td>4/12</td>
<td>Logic and Foundations: decidable versus undecidable</td>
<td>3.5, notes</td>
</tr>
<tr>
<td>4/17</td>
<td>Logic and Foundations: coming full circle or enumerable = diophantine</td>
<td>class notes</td>
</tr>
<tr>
<td>4/19</td>
<td>Course review</td>
<td></td>
</tr>
<tr>
<td>5/1</td>
<td><strong>PROJECT DUE</strong></td>
<td></td>
</tr>
</tbody>
</table>

**Note:** This schedule is meant as a guide. Some sections or subsections may be omitted depending on availability of time and/or superceding priorities. Any deviations from this schedule will be announced in advance.
Conceptual Tour of Contemporary Mathematics
Honors 216
Project

Due May 1, 2012

This project involves exploring a mathematical topic in greater detail than is done in class and homework assignments. The topic can be one that was covered in class or an entirely new topic that was not discussed in class. The following steps should be taken to successfully complete the project.

- **Selection.** Discuss with your partner a topic of mutual interest that you would like to know more about. Selecting a topic that interests both of you will result in a better project.

- **Research.** Find appropriate sources for learning more about your selected topic. These sources include books, journal articles, and websites. Pay particular attention to the mathematical level of the sources you choose. The level should be about the same as your textbook and class notes. It is fine if you do not understand every detail, but if you find yourself often losing the train of thought in an argument or demonstration, then this probably indicates that the mathematical level is too high. Of course, it is fine for you to use only those parts that you understand.

Do not hesitate to seek the assistance of a reference librarian – they can be of great help. You may also consult the list of references that you received in class. Also, remember to cull the references at the end of books, articles, and websites you find helpful.

The paper should be between 5 and 10 pages in length. I am not interested as much in quantity as in quality. The paper should address each of the following points:

- **Motivation.** Why should I be interested in this topic? Is it beautiful mathematics? If so, why is it beautiful? Is it surprising? Is it deep? Does this topic have applications outside of mathematics? If so, what are these applications and how are they beneficial? Does understanding of the topic change the way you think about mathematics or the world? If so, how? This should be the first section of the paper. Grab the reader’s interest!

- **Explanation.** Put the topic in historical context. How did the topic evolve? Did it develop in response to the solution or understanding of a topic in a field other than mathematics? Comment on the “perception → heuristic → conception” rubric we discussed in class. Give clear definitions and examples to help understand the topic.

- **Applications.** Discuss applications of the topic, both to other branches of mathematics and to fields outside of mathematics. Did it revolutionize the field, or did it simply solve a specific problem? Does it have applications to several fields? Are these applications surprising or straightforward?

- **Future.** Speculate on the future development of the topic. List and explain any unsolved or conjectured problems related to the topic. Is this currently an active area of research? Do you think there are any unexplored applications of this topic? If so, speculate on how this topic might contribute to the understanding of other problems and questions.

- **References.** List all references used, including links to websites. If you use multiple sources, clearly site in the paper the relevant references.