TRANSMITTAL for UNDERGRADUATE PROGRAMS: Changes or Proposals

INFORMATION

1. Program title: Crop And Soil Science Major
2. Department(s): Plant And Earth Science
3. College(s): Agriculture, Food and Environmental Sciences
4. Proposal prepared by: Donavan Taylor Date: 8/28/2012

5. Check all that apply:
   □ New program
   □ Change in course name
   □ Change in Major
   □ Change in course content
   □ Existing program
   □ Change in number of credits
   □ Change in Minor
   □ Change in Emphasis/Option

6. Other Programs/Departments Consulted (Requires letters of support from all Departments or Programs substantially affected):
   1. Chemistry
   2. Sociology

7. Date of Implementation: Fall Semester 2013 Year

8. Have all courses in this program been approved? Yes □ No □
   If “No,” which ones? CROP 285

9. Attach Request Narrative. (Include description of program before and after proposed changes).

UNIT APPROVALS: Requires signatures of all Departments Chairs and Deans whose programs will be affected by the changes or proposal. Signature lines for the affected Departments and Colleges (Noted in 6 above), are on the back of this form. These signatures should be obtained prior to review by all other shared governance levels.

<table>
<thead>
<tr>
<th>Signature</th>
<th>Date</th>
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<tbody>
<tr>
<td>Department Chair</td>
<td>Donavan H. Taylor</td>
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<tr>
<td>College Curriculum Cmmt. Chair</td>
<td>Donavan H. Taylor</td>
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<tr>
<td>Dean of College</td>
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<tr>
<td>University Curriculum Cmmt. Chair</td>
<td>Alex Tyman</td>
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<tr>
<td>Academic Policy &amp; Programs Cmmt. Chair</td>
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<tr>
<td>Faculty Senate Chair</td>
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<td>Provost / Vice Chancellor</td>
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<td>Chancellor</td>
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NOTE: The master copy of this transmittal and accompanying documents must be filed in the Provost’s office upon final approval. The Provost’s office will notify all appropriate administrative offices [Registrar, Dean(s), and Department Chair(s)] of approvals and necessary actions to implement changes.

Rev. 11/08
The Plant and Earth Science Department requests the following changes to the Crop and Soil Science Major. These changes are needed to update the major to reflect recent course changes, give added uniformity to the three options and to increase the ability of students to communicate crops and soils information in a professional manner. The proposed curriculum as well as the previous curriculum of the major is attached with changes in the new curriculum noted in red. Courses in green from the former curriculum have been dropped as a required course. Courses in blue are still required in the proposed curriculum but have been changed to a different category in which they are required.

Summary of changes:

A new sophomore-level communications seminar (CROP 285) will be required of students in all three options. The senior-level seminar in agronomy (CROP 485) will be required of all students, whereas it was previously required in only two of the three options. The intent is to increase the ability of our majors to communicate crops and soils information in a professional manner.

In the crop science option, the only change in addition to CROP 285 already mentioned is that CROP 260 (Plant and Seed Identification), a required class, was changed from a 2-credit course to a 3-credit course to reflect changes to that course approved last year.

In the soil science option, SOIL 350, which was formerly a 4-credit course, was changed last year to two 2-credit courses, SOIL 250 and SOIL 350. This proposal reflects that change. The required chemistry course beyond CHEM 121 has been changed from CHEM 122 to CHEM 230. This seems appropriate considering the increased emphasis in soil science on soil health, soil biology and soil reclamation. It also makes the chemistry requirements of the Crop Science and Soil Science Options more closely aligned with each other. GEOL 101 is now explicitly listed as a required course in the soil science option. Since it was a prerequisite for other courses, it has always been an implied requirement. It is proposed that students take either ENGL 266 or 367 for an additional writing experience. The previous curriculum required ENGL 367.

In the sustainable agriculture option, SOCI 332 (Environmental Sociology) has replaced SOCI 340 (Sociology of Rural Life) to give students relevant training the sociological issues related to sustainability. SOCI 340 has not been taught for several years. This change seems necessary to update the curriculum. The requirement of an internship in this option was dropped in order to allow for addition of seminars and add to flexibility for students. We assume almost all students in this option will still desire to complete an internship or other activity such as education abroad. The five animal production courses (ANSC 365-369) were removed from the list of courses in one section where students can pick from the list because students will have already met that requirement before they have met the prerequisites for those classes.

In the proposed curriculum, the following table shows the number of credits coming from different categories.

<table>
<thead>
<tr>
<th>Option</th>
<th>General Ed and University Req.</th>
<th>Foundations in Agriculture</th>
<th>Common Core in Major</th>
<th>Required Courses in Option</th>
<th>Directed Electives</th>
<th>Free Electives</th>
</tr>
</thead>
<tbody>
<tr>
<td>Crop Science</td>
<td>41-44</td>
<td>12</td>
<td>16</td>
<td>38</td>
<td>10</td>
<td>0-3</td>
</tr>
<tr>
<td>Soil Science</td>
<td>41-44</td>
<td>12</td>
<td>16</td>
<td>38-42</td>
<td>-</td>
<td>6-13</td>
</tr>
<tr>
<td>Sustainable Ag</td>
<td>41-44</td>
<td>12</td>
<td>16</td>
<td>38-41</td>
<td>-</td>
<td>7-13</td>
</tr>
</tbody>
</table>
Crop and Soil Science Major Curriculum
August 2012

Current

Foundation Courses in Agriculture 12 cr. hrs.
CROP 161 Introduction to Plant Science 3 cr.
SOIL 120 Introduction to Soil Science 3 cr.
AGEC 230 Agricultural Economics I 3 cr.
Select one from:
AGEN 150 Agricultural and Environmental Engineering Technology 3 cr.
ANSC 111 Introduction to Animal Science 3 cr.
FDSC 110 The Science of Food 3 cr.

Major Requirements 64 Total Credits
Required Courses: 14 cr. hrs.
CROP 263 Forage Crop Production 3 cr.
CROP 266 Crop and Soybean Production 3 cr.
SOIL 311 Soil Fertility 4 cr.
SOIL 440 Soil and Water Conservation 4 cr.

Options (choose one):
Crop Science Option 50 cr. hrs.
CROP 257 Genetics 3 cr.
CROP 260 Plant and Seed Identification 2 cr.
CROP 345 Weed Control 3 cr.
CROP 410 Plant Breeding and Crop Improvement 3 cr.
CROP 435 Crop Physiology 4 cr.
CROP 451 Integrated Pest Management 3 cr.
CROP 485 Seminar in Agronomy 1 cr.
ANSC 341 Biometrics 3 cr.
AGBI 251 Agricultural Biochemistry 3 cr.
AGBI 252 Agricultural Biochemistry Laboratory Techniques 1 cr.
BIOL 314 Plant Pathology 3 cr.
BIOL 333 Entomology 3 cr.
CHEM 230 General Organic Chemistry 3 cr.
Select one course from the following:
AGEC 355 Agricultural Markets and Prices 3 cr.
AGEC 360 Farm Management 3 cr.
AGEC 365 Agricultural Finance 3 cr.
AGEC 410 Professional Selling 3 cr.

Directed Electives 12 cr. hrs.
(consult with crop science faculty for courses)

Proposed

Foundation Courses in Agriculture 12 cr. hrs.
CROP 161 Introduction to Plant Science 3 cr.
SOIL 120 Introduction to Soil Science 3 cr.
AGEC 230 Agricultural Economics I 3 cr.
Select one from:
AGEN 150 Agricultural and Environmental Engineering Technology 3 cr.
ANSC 111 Introduction to Animal Science 3 cr.
FDSC 110 The Science of Food 3 cr.

Major Requirements 54-64 Total Credits
Required Courses: 16 cr. hrs.
CROP 263 Forage Crop Production 3 cr.
CROP 266 Crop and Soybean Production 3 cr.
***CROP 285 Communication Sem. in Crops & Soils 1 cr.***
SOIL 311 Soil Fertility 4 cr.
SOIL 440 Soil and Water Conservation 4 cr.
CROP 485 Seminar in Agronomy 1 cr.

*** New course

Options (choose one):
Crop Science Option 48 cr. hrs.
CROP 257 Genetics 3 cr.
CROP 260 Plant and Seed Identification 3 cr.
CROP 345 Weed Control 3 cr.
CROP 410 Plant Breeding and Crop Improvement 3 cr.
CROP 435 Crop Physiology 4 cr.
CROP 451 Integrated Pest Management 3 cr.
AGBI 251 Agricultural Biochemistry 3 cr.
AGBI 252 Agricultural Biochemistry Laboratory Techniques 1 cr.
BIOL 314 Plant Pathology 3 cr.
BIOL 333 Entomology 3 cr.
CHEM 230 General Organic Chemistry 3 cr.
Select one course from the following:
AGEC 355 Agricultural Markets and Prices 3 cr.
AGEC 360 Farm Management 3 cr.
AGEC 365 Agricultural Finance 3 cr.
AGEC 410 Professional Selling 3 cr.

Directed Electives 10 cr. hrs.
(consult with crop science faculty for courses)
Soil Science Option 38-42 cr. hrs.

SOIL 325 Hydric Soils and Wetland Environments 3 cr.
SOIL 350 Pedology 4 cr.
SOIL 460 Soil Physics 3 cr.
CHEM 122 General Chemistry II 5 cr.

GEOL 102 Introductory Geology Lab 1 cr.
GEOL 327 Geomorphology and Glacial Geology 4 cr.
ESM 360 Applied Hydrology and Water Quality 4 cr.
ENGL 367 Technical Writing 3 cr.
CROP 485 Seminar in Agronomy 1 cr.

Select two courses from the following:
CROP 267 Small Grain and Miscellaneous Crop Production 3 cr.
CROP 345 Weed Control 3 cr.
CROP 363 Pasture Management 2 cr.
CROP 368 Sustainable Agriculture 3 cr.
CROP 435 Crop Physiology 4 cr.
CROP 451 Integrated Pest Management 3 cr.
ESM 305 Environmental Impact Assessment 2 cr.
ESM 412 Fate and Transport of Chemicals in the Environment 3 cr.
ESM 413 Environmental Analysis 4 cr.
GEOL 417 Hazardous Waste Operation and Emergency Response 2 cr.
GEOL 445 Hydrogeology 4 cr.

Select two courses from the following:
AGEN 363 Precision Agriculture Technology 3 cr.
ANSC 341 Biometrics 3 cr.
ESM 333 Remote Sensing of Natural Resources 3 cr.
ESM 363 GIS Applications in Resource Management 3 cr.
GENG 235 Surveying 3 cr.
GENG 236 Advanced Surveying 3 cr.
GEOG 250 Intro Cartography and GIS 3 cr.
GEOG 360 GIS: Theory and Methods 3 cr.

Select one course from the following:
ENGL 266 Business Writing 3 cr.
ENGL 367 Technical Writing 3 cr.

Soil Science Option 38-42 cr. hrs.

SOIL 250 Soil Profile Descriptions 2 cr.
SOIL 325 Hydric Soils and Wetland Environments 3 cr.
SOIL 350 Soil Development 2 cr.
SOIL 460 Soil Physics 3 cr.
CHEM 230 General Organic Chemistry 3 cr.
GEOL 101 Introductory Geology 3 cr.
GEOL 102 Introductory Geology Lab 1 cr.
GEOL 327 Geomorphology and Glacial Geology 4 cr.
ESM 360 Applied Hydrology and Water Quality 4 cr.

Select two courses from the following:
CROP 267 Small Grain and Miscellaneous Crop Production 3 cr.
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GENG 235 Surveying 3 cr.
GENG 236 Advanced Surveying 3 cr.
GEOG 250 Intro Cartography and GIS 3 cr.
GEOG 360 GIS: Theory and Methods 3 cr.

Select one course from the following:
ENGL 266 Business Writing 3 cr.
ENGL 367 Technical Writing 3 cr.
Sustainable Agriculture Option 45-48 cr. hrs.
ESM 105 Intro. to Environmental Studies 3 cr.
SOC 340 Sociology of Rural Life 3 cr.
AGEC 250 World Food and Population 3 cr.
CROP 368 Sustainable Agriculture 3 cr.
ESM 220 Environmental Sustainability 3 cr.
CROP 468 Organic Food Production Systems 3 cr.
CROP 451 Integrated Pest Management 3 cr.
CROP/HORT 222 Practicum in Community Gardening 3 cr.
or CROP 270 or HORT/ANSC/FDSC/AGEN 270 Internship 4 cr.

Select two courses of the following:
AGEN 325 Alternative Energy Systems 3 cr.
HORT 169 Introduction to Horticulture 3 cr.
HORT 327 Vegetable Science and Production 4 cr.
HORT 347 Fruit Science and Production 4 cr.
CROP 260 Plant and Seed Identification 2 cr.
CROP 363 Pasture Management 2 cr.
CROP 345 Weed Control 3 cr.
CROP 410 Plant Breeding and Crop Improvement 3 cr.
BIOL 314 Plant Pathology 3 cr.
BIOL 333 Entomology 3 cr.
ANSC/FDSC 238 Meat and Meat Products 3 cr.
FDSC 259 Cereal Technology 3 cr.
CROP/ANSC 257 Genetics 3 cr.
ANSC 231 Principles of Nutrition 3 cr.
ANSC 232 Applied Feeds and Feeding 3 cr.
ANSC 365 Poultry Production 3 cr.
ANSC 366 Swine Production 3 cr.
ANSC 367 Beef Production 3 cr.
ANSC 368 Sheep Production 3 cr.
ANSC 369 Equine Production 3 cr.

Select two courses of the following:
AGEC 240 Cooperatives 3 cr.
AGEC 355 Agricultural Markets and Prices 3 cr.
AGEC 360 Farm Management 3 cr.
AGEC 361 Horticulture Business Management 3 cr.
AGEC 450 Introduction to Natural Resource Economics 3 cr.
AGEC 495 Direct Marketing 3 cr.
AGEC 410 Professional Selling 3 cr.
PHIL 304 Business Ethics 3 cr.
POLS 256 Public Policymaking 3 cr.

Select two courses of the following:
AGED 202 Leadership and Group Dynamics 3 cr.
ESM 151 Intro. to Land Use Theory & Practice 3 cr.
ESM 307 Multicultural Persp. on Environment 3 cr.
GEOG 120 Human Geography 3 cr.
GEOG 214 World Patterns of Plants & Animals 3 cr.
GEOG 220 Economic Geography 3 cr.
PHIL 240 Social Ethics 3 cr.
PHIL 303 Environmental Ethics 3 cr.
Electives 4-6 cr.

Sustainable Agriculture Option 38-41 cr. hrs.
ESM 105 Intro. to Environmental Studies 3 cr.
SOC 332 Environmental Sociology 3 cr.
AGEC 250 World Food and Population 3 cr.
CROP 368 Sustainable Agriculture 3 cr.
ESM 220 Environmental Sustainability 3 cr.
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PHIL 303 Environmental Ethics 3 cr.
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POLS 256 Public Policymaking 3 cr.
Donavon Taylor

From: Timothy Nissen
Sent: Thursday, November 01, 2012 3:25 PM
To: Donavon Taylor
Subject: RE: Changes to the Crops and Soils Curriculum

Donavon,

That's fine and needed. 340 hasn't been taught because we no longer had anyone to teach it. With the new curriculum revision it doesn't even exist any more. 332 does exist and will be taught.

Tim

Dr. Timothy E. Nissen, Chair
Department of Sociology, Anthropology, Criminal Justice

From: Donavon Taylor
Sent: Thursday, November 01, 2012 3:13 PM
To: Karl Peterson; Timothy Nissen
Subject: Changes to the Crops and Soils Curriculum

Hi Karl and Tim,

We are proposing some changes to the Crops and Soils Major Curriculum and courses in your departments are involved:

In the Soils Option we are changing the required Chemistry classes to CHEM 121 and CHEM 230 rather than CHEM 121 and CHEM 122. We felt 122 and 230 were equally applicable and valuable to our soils students and changing would make the chemistry requirements uniform between the Crops Option and the Soils Option.

In the Sustainable Agriculture Option we are changing the required Sociology class from SOCI 340 to SOCI 332. This change was made because SOCI 340 is seldom taught anymore.

I have attached a narrative explaining the changes and rationale. If you have any comments regarding these changes, I would appreciate receiving them. If they are acceptable to your departments, I would appreciate a letter or email of support.

Thanks,
Don Taylor
Hi Don

Thanks for the note.

This sounds like a reasonable change given our current course offerings. Your students will receive a less rigorous treatment of solutions and equilibrium, a qualitative treatment of thermodynamics and kinetics, not no treatment of electrochemistry (topics from CHEM 122 that are not in CHEM 230), but will receive a survey of organic compounds, and their properties and reactivity.

Just a reminder that we are planning to introduce our new GOB sequence in Fall 2013. The G course proposal is almost ready to share, the O course proposal is pretty much ready, but the separate lab course is lagging a little behind. Once we get the lab a bit more clearly defined (hopefully in the next two weeks), we will be sharing the courses with the departments that currently take the CHEM 120/1 --> CHEM 230 --> AGBI 251/7 sequence. You will likely be entertaining CHEM 115 (the new G course, a 4-credit lecture) --> CHEM 230 (the revised course to follow the new CHEM 115) and a 1 credit lab course that can be taken after CHEM 115, with or without the revised CHEM 230.

Karl

Karl P. Peterson, Chair
Department of Chemistry
University of Wisconsin-River Falls
715-425-3523

Hi Karl and Tim,

We are proposing some changes to the Crops and Soils Major Curriculum and courses in your departments are involved:

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