

# Change Undergraduate Course

100000

## Change a Course

**Subject:** AGM-Agricultural Mechanization  
**Number:** 3031  
**Effective Term:** Spring 2016  
**Title:** Cal for Mech Ag Lab

Honors Course:

Add Honors Course:

**Last Term Course was taught:** 999999

### Brief Statement of Change Based on Assessment Results:

Change of contact hours on lab from 3 to 2 hours. We have been able to increase the efficiency of the laboratory experience, so 3 hours are no longer needed. We also shifted from a model where all work is completed in the lab to where some work is completed outside class.

## Rationale for Changing a Course

- Strengthen Program Requirement(s)
- Alignment of Student Learning Outcomes
- Alternative Delivery of Content
- Improve Time to Degree
- Evolution of the Discipline
- Changing Prerequisites
- Address DWF Rates
- General Education Modifications
- Other (Please specify.)

### Change of Credit

From  
 Fixed Credit Course  
**Credit Hrs Contact Hrs**  
 0 3  
 Variable Credit Course  
**Credit Hrs Contact Hrs**  
**Min Max Min Max**  
 \_\_\_\_\_  
 To  
 Fixed Credit Course  
**Credit Hrs Contact Hrs**  
 0 2  
 Variable Credit Course  
**Credit Hrs Contact Hrs**  
**Min Max Min Max**

### Change Catalog Description

**From** Non-credit laboratory to accompany AGM 3030.  
**To** Non-credit laboratory to accompany AGM 3030.

000002

**Learning Objectives**

This course is designed to develop and enhance the problem solving ability of the student and to acquaint each with a range of problems requiring an understanding and application of basic engineering principles. Systematic problem solving techniques which include neat, accurate, and well-organized presentation of the solution will be emphasized. Laboratory time will be used to introduce students to problem analysis using MS Excel spreadsheet software.

**Topical Outline**

1. Excel Tutorial Exercise 2. Pressure Drop Across a Steel Pipe 3. Calculation of Vectors by Method of Components 4. Calculation of Miscellaneous Facts 5. Drawbar Power and Fuel Required for Moldboard Plowing at Different Speeds 6. Calculation of Work and Power Required for a Combination of Forces - Part I 7. Calculation of Work and Power Required for a Combination of Forces - Part II 8. Unit and Number Conversion 9. Application (Least-Cost Configuration of Cylindrical Storage Tank) 10. Calculation of Heat Gain or Loss Through Building Components 11. Fitting Curves to Experimental Data Points 12. Calculation of Heat Balance for Mechanically Ventilated Turkey Rearing Structure 13. Loan and Mortgage 14. Programming Macros and VBA

**Evaluation**

Undergraduate

<b>A</b>	90	-	100
<b>B</b>	80	-	89
<b>C</b>	70	-	79
<b>D</b>	60	-	69
<b>F</b>	<		60

Quizzes and homework (30%); Labs (20%); Hour Exams (30%); Final exam (20%). Standard grading scale applies.

**Syllabus**

Upload File: agm3030-20150821125708.pdf

**Description:** agm 3030 syllabus**Form**

**User ID:** pagudel    **Name:** Paula Agudelo  
**Date:** 09/11/2015    **Number:** 8740

000003

*Paula Agudelo*

*August 21, 2015.*

Chair, Department Curriculum Committee

Date

*Patricia Zungoli*

*21 Aug 2015*

Department Chair

Date

*Robert J. Kowinski*

*8/24/15*

Chair, College Curriculum Committee

Date

*Ed Whitwell*

*8/24/15*

College Dean

Date

Director, Calhoun Honors College

Date

*John D. Hill*

*10/2/2015*

Chair, Undergraduate Curriculum Committee

Date

Chair, Graduate Curriculum Committee

Date

*Robert S. Jones*

*10/4/2015*

Provost

Date

President

Date

**AgM 3030 - Spring 2015<sup>1</sup>**  
**Calculations for Mechanized Agriculture**

**Instructor:** Young J. Han, Ph.D., P.E.  
248 McAdams Hall (656-4077; yhan@clermson.edu)  
**Office Hours:** MTh 1:00-4:00; any other time by appointment

**Location:** Lecture - 143 McAdams Hall (9:05 MW)  
Lab. - 143 McAdams Hall (12:20-3:20 W Section 001; 3:30-6:30 W Section 002)

**Objective:** This course is designed to develop and enhance the problem solving ability of the student and to acquaint each with a range of problems requiring an understanding and application of basic engineering principles. Basic principles of solid mechanics, electricity, fluid mechanics, heat transfer, and psychrometric properties of air will be applied in solving problems. Systematic problem solving techniques which include neat, accurate, and well-organized presentation of the solution will be emphasized. Laboratory time will be used to introduce students to problem analysis using MS Excel spreadsheet software.

**Text Book:** Introduction to Agricultural Engineering Technology: A Problem Solving Approach, 3rd Ed. H. L. Field and J. B. Solie. 2007. Springer Science+Business Media, LLC. ISBN 978-0-387-36913-6

Class Notes compiled by instructor.

**Grading:** Quizzes and homeworks (30%); Labs (20%); Hour Exams (30%);  
Final exam (20%). Standard grading scale applies.

**Computer Usage:** Utilize word processing and spreadsheet programs for weekly reports, proposals, and preparation of visuals for oral presentations. Communicate with instructor and teaching assistant via E-mail. Legal, ethical, and moral guidelines of using computers and information technology will be emphasized throughout the course.

**Academic Integrity:** As members of the Clemson University community, we have inherited Thomas Green Clemson's vision of this institution as a "high seminary of learning." Fundamental to this vision is a mutual commitment to truthfulness, honor, and responsibility, without which we cannot earn the trust and respect of others. Furthermore, we recognize that academic dishonesty detracts from the value of a Clemson degree. Therefore, we shall not tolerate lying, cheating, or stealing in any form.

When, in the opinion of a faculty member, there is evidence that a student has committed an act of academic dishonesty, the faculty member shall make a formal written charge of academic dishonesty, including a description of the misconduct, to the Associate Dean of Undergraduate Services. At the same time, the faculty

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<sup>1</sup> The schedule and procedures in this syllabus are subject to change in the event of extenuating circumstances.

member may, but is not required to, inform each involved student privately of the nature of the alleged charge.

Although collaboration is encouraged in labs and homeworks, each student is responsible for submitting their own lab reports and homeworks. No collaboration is allowed in quizzes and exams.

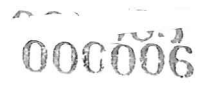
Attendance Policy: Regular and punctual attendance at all class and laboratory sessions is the responsibility of each student. College work proceeds at such a pace that regular attendance is necessary in order for the student to obtain maximum benefits from instruction. If a student finds it necessary to be absent from class, it is the student's responsibility to make up resulting deficiencies as described in CU Announcements. The instructor reserves the right to reduce the semester grade if a student has more than three unexcused absences.

There will be several unannounced quizzes to enforce the class attendance. Absence from a lab or a quiz will result in missing grade for the lab or the quiz. In case the instructor is to be absent from class, the class should be notified in advance if at all possible. If no advance arrangement was made, students are authorized to leave after a fifteen-minute wait.

Disability Access: It is the University policy to provide, on a flexible and individualized basis, reasonable accommodations to students who have disabilities. Students are encouraged to contact Student Disability Services to discuss their individual needs for accommodation.

Lab Reports & Homeworks: Lab reports and homeworks are due by the next lecture period. Late homeworks and lab reports will be penalized 20 percent for the first week after the due date and additional 10 percent for each subsequent week.

Lab reports will be graded on the basis of clarity, correctness, completeness, and neatness. Concise reports are preferable to lengthy ones. Lab reports should be prepared by word processor and spreadsheet on a computer. If curves and figures are included, these should be numbered in sequence as well as titled and referred to by number in the text. It is recommended that all curves and figures be plotted using a computer. In case computer printout is not available, all curves and figures **should be made in pencil on cross section paper** by a smooth curve or straight line as appropriate. Experimental points should be shown by small symbols (circles, squares, etc.). **Do not** show the points on theoretically determined curves.



**AgM 3030 - Spring 2015**  
**Calculations for Mechanized Agriculture**

**Class Schedule**

Date		Lectures	HW
Wednesday	01/07/2015	1. Introduction to Course and Systematic Problem Solving Procedures	1
Monday	01/12/2015	2. Systems of Units, Unit Conversions, Unit Factors	2
Wednesday	01/14/2015	3. Applications of Extended Unit Factor Method	3
Monday	01/19/2015	----- MLK Holiday -----	
Wednesday	01/21/2015	4. Simple Machines and Introduction to Vectors	4
Monday	01/26/2015	5. Vectors - Applications of Method of Components.	5
Wednesday	01/28/2015	6. Mechanical Principles: Static Equilibrium, Energy, Torque, Power, and System Efficiency	6
Monday	02/02/2015	7. Free body diagrams, Work against Gravity (WG)	7
Wednesday	02/04/2015	8. Work against Friction (WF) on Horizontal and Inclined plane	8
Monday	02/09/2015	9. Work Against Friction and Gravity on an Inclined Plane	9
Wednesday	02/11/2015	10. ***Hour Test No. 1***	10
Monday	02/16/2015	11. Catch-up and Questions and Answers Relative to Test No. 1	11
Wednesday	02/18/2015	12. Work Against Rolling Resistance (WRR) on Horiz. and Inclined	12
Monday	02/23/2015	13. Power Requirements for Rolling Resist, on Horiz. and Inclined Surfaces	12
Wednesday	02/25/2015	14. Aerodynamic Forces; Terminal Velocity	13
Monday	03/02/2015	15. Work and Power Requirements Against Elastic and Pressure Forces	14
Wednesday	03/04/2015	16. Work and Power Requirements Against Inertial Forces	15
Monday	03/09/2015	17. Conservation of Energy - Application to Mechanical Systems	16
Wednesday	03/11/2015	18. Conservation of Energy - Application to Mechanical Systems	17
Monday	03/16/2015	----- Spring Break -----	
Wednesday	03/18/2015	----- Spring Break -----	
Monday	03/23/2015	19. Calculations Involving Handling, Moisture Mgt., and Storage	18
Wednesday	03/25/2015	20. ***Hour Test No. 2***	
Monday	03/30/2015	21. Catch-up and Questions and Answers Relative to Test No. 2	
Wednesday	04/01/2015	22. Insulation and Heat Flow Calculations	19
Monday	04/06/2015	23. Properties of Air-Water Vapor Mixtures and Use of Psychrometric Chart	20
Wednesday	04/08/2015	24. Heat Balance for Buildings Housing Livestock	
Monday	04/13/2015	25. Selection of Structural Members	21
Wednesday	04/15/2015	26. Principles of Electricity	22
Monday	04/20/2015	27. DC Circuits and Circuit Component; Resistor Network	23
Wednesday	04/22/2015	28. Course Summary & Review	
Monday	04/27/2015	Final Exam Week	
Friday	05/01/2015	Final Exam @8:00 - 10:30 am	

**AgM 3030 - Spring 2015**  
**Calculations for Mechanized Agriculture**

**Laboratory Schedule**

Date	Labs
Wednesday 01/14/2015	1. Spreadsheet Software: Excel Tutorial Exercise
Wednesday 01/21/2015	2. Spreadsheet Software: (Pressure Drop Across a Steel Pipe)
Wednesday 01/28/2015	3. Spreadsheet Software: (Calculation of Vectors by Method of Components)
Wednesday 02/04/2015	4. Spreadsheet Software: (Calculation of Miscellaneous Facts)
Wednesday 02/11/2015	5. Spreadsheet Software: Application (Drawbar Power and Fuel Required for Moldboard Plowing at Different Speeds)
Wednesday 02/18/2015	6. Spreadsheet Software: Application (Calculation of Work and Power Required for a Combination of Forces - Part I)
Wednesday 02/25/2015	7. Spreadsheet Software: Application (Calculation of Work and Power Required for a Combination of Forces - Part II)
Wednesday 03/04/2015	8. Spreadsheet Software: (Unit and Number Conversion)
Wednesday 03/11/2015	9. Spreadsheet Software: Application (Least-Cost Configuration of Cylindrical Storage Tank)
Wednesday 03/18/2015	----- Spring Break -----
Wednesday 03/25/2015	10. Calculation of Heat Gain or Loss Through Building Components
Wednesday 04/01/2015	11. Spreadsheet Software - Fitting Curves to Experimental Data Points
Wednesday 04/08/2015	12. Calculation of Heat Balance for Mechanically Ventilated Turkey Rearing Structure
Wednesday 04/15/2015	13. Spreadsheet Software: (Loan and Mortgage)
Wednesday 04/22/2015	14. Spreadsheet Software - Programming Macros and VBA

000008

## Change 4000/6000 Course

### Change a Course

**Subject:** AGM-Agricultural Mechanization  
**Number:** 4601/6601  
**Effective Term:** Spring 2016  
**Title:**  
 Honors Course:  
 Add Honors Course:  
**Last Term Course was taught:** 999999

#### Brief Statement of Change Based on Assessment Results:

Change of contact hours on lab from 3 to 2 hours. We have been able to increase the efficiency of the laboratory experience, so 3 hours are no longer needed. We also shifted from a model where all work is completed in the lab to where some work is completed outside class.

### Rationale for Changing a Course

- Strengthen Program Requirement(s)
- Alignment of Student Learning Outcomes
- Alternative Delivery of Content
- Improve Time to Degree
- Evolution of the Discipline
- Changing Prerequisites
- Address DWF Rates
- General Education Modifications
- Other (Please specify.)

#### Change of Credit

From  
 Fixed Credit Course  

Credit Hrs	Contact Hrs
0	3

 Variable Credit Course  

Credit Hrs	Contact Hrs		
Min	Max	Min	Max
To			
Fixed Credit Course			
Credit Hrs	Contact Hrs		
0	2		

 Variable Credit Course  

Credit Hrs	Contact Hrs		
Min	Max	Min	Max

#### Change Catalog Description

<b>From</b>	Non-credit laboratory to accompany AGM 4600.
<b>To</b>	Non-credit laboratory to accompany AGM 4600.



000009

**Learning Objectives**

The overall goal of this course is to present information related to, and provide applications of, the utilization of electric and other utilities in agricultural, rural, and residential situations. Upon completion of this course, students will be expected to be able to: 1 Demonstrate understanding of basic electrical principles. 2 Complete basic wiring, circuitry, motor, controls, and related exercises. 3 Demonstrate appropriate safety practices, behaviors, and professional conduct. 4 Solve fundamental problems and analyze applications related to agricultural and home utilities. 5 Provide appropriate applications of agricultural and residential utilities to support production systems, and society in general.

**Topical Outline**

Lab 1 Electrical safety and electrical measurement equipment Lab 2 Direct Current Circuits Lab 3 Electric Energy Generation Lab 4 Determining Cost of Electrical Energy Lab 5 Wiring exercise (I) Lab 6 Safe Electrical Wiring Technique (NEC314-16) Lab 7 Wiring exercise (II) Lab 8 Wiring exercise III Lab 9 SE Design and Layout Lab 10 Electric Motor Controls and Magnetic Starter Lab 11 Programmable Logic Controllers (I) Lab 12 Programmable Logic Controllers (II) Lab 13 Designing a Farmstead/Agribusiness Electrical Plan

**Evaluation**

4000

A 90 - 100

B 80 - 89

C 70 - 79

D 60 - 69

F &lt; 60

AgM 4600: Quizzes and homework (30%); Labs (20%); Hour Exams (30%); Final exam (20%).

6000

A 90 - 100

B 80 - 89

C 70 - 79

F &lt; 70

AgM 6600: Quizzes and homework (20%); Labs (10%); Project (20%); Hour Exams (30%); Final exam (20%).

**Syllabus**

Upload File: 4600sylla-F15-1-20150821090806.rtf

**Description:** syllabus 4600 6600**Form****User ID:** pagudel **Name:** Paula Agudelo**Date:** 09/11/2015 **Number:** 8709

000010

*Paula Agudelo M.* August 21, 2015. Date  
Chair, Department Curriculum Committee

*Patricia Zuzoli* 21 Aug 2015 Date  
Department Chair

*Robert J. Kosinski* 8/24/15 Date  
Chair, College Curriculum Committee

*Zed Whitwell* 8/24/15 Date  
College Dean

Director, Calhoun Honors College Date

*John D. Hipp* 10/2/2015 Date  
Chair, Undergraduate Curriculum Committee

Chair, Graduate Curriculum Committee Date

*Robert S. Jones* 10/4/2015 Date  
Provost

President Date

## AGM 4600/6600 Electrical Systems

**Instructor:** Young J. Han, Ph.D., P.E. 237 McAdams Hall (656-4077; yhan@clermson.edu)

**Office Hours:** T 1:00-4:00;W 8:00-12:00; any other time by appointment

**Location:** Lecture - 143 McAdams Hall (9:05 MW) Lab. - 143 McAdams Hall (1:30-3:30 W Section 001; 3:30-5:30 W Section 002)

**Goals:** Students in agriculture and related curricula study electric and other utilities on the farm and in the home. Emphasizes selection, installation and maintenance of wiring systems, lighting systems, motors and controls.

**Objective:** The overall goal of this course is to present information related to, and provide applications of, the utilization of electric and other utilities in agricultural, rural, and residential situations. Upon completion of this course, students will be expected to be able to:

- 1 Demonstrate understanding of basic electrical principles.
- 2 Complete basic wiring, circuitry, motor, controls, and related exercises.
- 3 Demonstrate appropriate safety practices, behaviors, and professional conduct.
- 4 Solve fundamental problems and analyze applications related to agricultural and home utilities.
- 5 Provide appropriate applications of agricultural and residential utilities to support production systems, and society in general.

**Text Book:** Duncan, Ralph and James E. Wren. Electrical Wiring. 9th ed. 2007. American Association for Vocational Instructional Materials (AAVIM), Athens, GA. ISBN 978-0-89606-385-2

Hiatt, Richard S., Ed. Agricultural Wiring Handbook. 16th ed. 2012. Rural Electricity Resource Council, Inc., Wilmington, OH.

Class Notes compiled by instructor.

**Reference:** Winsett, Ivan. Basics of Electrical Motors. 1st ed. 2002. American Association for Vocational Instructional Materials (AAVIM), Athens, GA.

National Electric Code (NEC) 2014. National Fire Protection Association, Inc. (NFPA), Quincy, MA.

**Grading:** AgM 4600: Quizzes and homework (30%); Labs (20%); Hour Exams (30%); Final exam (20%).  
AgM 6600: Quizzes and homework (20%); Labs (10%); Project (20%); Hour Exams (30%); Final exam (20%). Standard grading scale applies.

**Computer Usage:** Laptop with Windows Operating System is required for labs. Utilize word processing and spreadsheet programs for weekly reports, proposals, and preparation of visuals for oral presentations. Communicate with instructor and teaching assistant via E-mail. Legal, ethical, and moral guidelines of using computers and information technology will be emphasized throughout the course.

Academic Integrity: As members of the Clemson University community, we have inherited Thomas Green Clemson's vision of this institution as a "high seminary of learning." Fundamental to this vision is a mutual commitment to truthfulness, honor, and responsibility, without which we cannot earn the trust and respect of others. Furthermore, we recognize that academic dishonesty detracts from the value of a Clemson degree. Therefore, we shall not tolerate lying, cheating, or stealing in any form. When, in the opinion of a faculty member, there is evidence that a student has committed an act of academic dishonesty, the faculty member shall make a formal written charge of academic dishonesty, including a description of the misconduct, to the Associate Dean of Undergraduate Services. At the same time, the faculty member may, at his/her discretion, inform each involved student privately of the nature of the alleged charge. Although collaboration is encouraged in labs and homework, each student is responsible for submitting their own lab reports and homework. No collaboration is allowed in quizzes and exams.

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There will be several unannounced quizzes to enforce the class attendance. Absence from a lab or a quiz will result in a grade of zero for the lab or the quiz. Makeup tests will not be given for quizzes or other unexcused tests. In case the instructor is to be absent from class, the class should be notified in advance if at all possible. If no advance arrangement was made, students are authorized to leave after a fifteen-minute wait.

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Lab reports will be graded on the basis of clarity, correctness, completeness, and neatness. Concise reports are preferable to lengthy ones. If curves and figures are included, these should be numbered in sequence as well as titled and referred to by number in the text. It is recommended that all curves and figures be plotted using a computer. In case computer printout is not available, all curves and figures should be made in pencil on cross section paper by a smooth curve or straight line as appropriate.

### AgM 6600 Project

AgM 6600 requires a semester project for graduate credit. The objective of the project is to design an electrical systems application of your choice, which includes selection, installation and maintenance of wiring systems, lighting systems, motors and/or controls. The application may be for your graduate research project.

One page proposal describing the scope of the project is due by the second week of the semester. The final report of the project is expected to be presented to the class and invited Faculty at the end of the semester. The project will account for 20% of the AGM 6600 semester grade.

Date		Text	Lectures	HW
Wednesday	08/19/15		Course introduction, Class CD	
Monday	08/24/15	Notes 1	Direct current circuits, Series/Parallel circuits	HW1
Wednesday	08/26/15	HW1	Series/Parallel circuits; Power and Power Factor	
Monday	08/31/15	HW2	HW 2 - Ohm's Law (#1 - #10); Quiz #1	HW2
Wednesday	09/02/15	HW2	HW 2 - Calculating Power (#11 - #22)	
Monday	09/07/15	Notes 2	Electric Energy Usage and Cost	
Wednesday	09/09/15	EW1,2	Symbols & Circuits; Electrical Energy Generation	HW3
Monday	09/14/15	EW3-4	Circuit Planning; Electrical Box Size	HW4
Wednesday	09/16/15	EW 5	Cables and conductors; (Notes 3-1&2) Wire size selection	HW5
Monday	09/21/15	AW1-3	(Notes 3-1&2) Wire size selection	HW6
Wednesday	09/23/15	EW 6-8	Wiring Chapters 6-8; Receptacles & Branch Circuits	
Monday	09/28/15	*	Test I	HW7
Wednesday	09/30/15	EW 9	Wiring Notes 4-1 through 4-3 (Switches and receptacles)	HW8
Monday	10/05/15	EW 10	Wiring Notes 4-4 (Three way switches)	HW9
Wednesday	10/07/15	EW 10	Wiring Notes 4-5 (Four way switches) Service Entrance Panels and Subpanels	
Monday	10/12/15	EW11		
Wednesday	10/14/15	EW12-18	Service Entrance Panels and Service Loads for Residence	HW11
Monday	10/19/15	AW16-19	Service Loads for Farm Residence and other Buildings	
Wednesday	10/21/15	-	Field Trip - Sunbelt Ag Expo (Moultrie, GA) 10/20-22, 2015	
Monday	10/26/15	AW20-22	Pole Metering at Load Center; Standby Service	HW12
Wednesday	10/28/15	EM 3-4	Notes 5-1 ~ 5-10 How Electric Motors start and Run	
Monday	11/02/15	-	Fall Break	HW13
Wednesday	11/04/15	EM 5-6	Notes 5-11 ~ 5-20 Electric Motors (Selection/Protection/Drives)	HW14
Monday	11/09/15	EM 7-8	Notes 5-12 ~ 5-27 Pulleys & V-belt; Magnetic Starter	HW15
Wednesday	11/11/15	*	Test II	
Monday	11/16/15	Notes 8	Programmable Logic Controllers	
Wednesday	11/18/15	HW10	Electrical Wiring for Livestock & Poultry Structures	HW16
Monday	11/23/15	AW23-25	Three-phase service; Underground Services and Feeders	HW10
Wednesday	11/25/15	-	Thanksgiving Holiday.	
Monday	11/30/15	Notes 5	Pulleys & V-belt; Motor Overload Protection; Magnetic Starter	
Wednesday	12/02/15	-	Digital Data Acquisition and Control; Course review and summary	
Monday	12/07/15		Final Exam Week	
Friday	12/11/15		Final Exam 8:00-10:30 am	

**AGM 4601/6601 - Laboratory Schedule**

Date		Labs	
Wednesday	08/26/15	Lab 1	Electrical safety and electrical measurement equipment
Wednesday	09/02/15	Lab 2	Direct Current Circuits
Wednesday	09/09/15	Lab 3	Electric Energy Generation (Field Trip or DVD)
Wednesday	09/16/15	Lab 4	Determining Cost of Electrical Energy
Wednesday	09/23/15	Lab 5	Wiring exercise (I)
Wednesday	09/30/15	Lab 6	Safe Electrical Wiring Technique (NEC314-16)
Wednesday	10/07/15	Lab 7	Wiring exercise (II)
Wednesday	10/14/15	Lab 8	Wiring exercise III
Wednesday	10/21/15	-	Field Trip - Sunbelt Ag Expo (Moultrie, GA) 10/20-22, 2015
Wednesday	10/28/15	Lab 9	SE Design and Layout
Wednesday	11/04/15	Lab 10	Electric Motor Controls and Magnetic Starter
Wednesday	11/11/15	Lab 11	Programmable Logic Controllers (I)
Wednesday	11/18/15	Lab 12	Programmable Logic Controllers (II)
Wednesday	11/25/15	-	Thanksgiving Holiday.
Wednesday	12/02/15	Lab 13	Designing a Farmstead/Agribusiness Electrical Plan

000015

### Change 4000/6000 Course

#### Change a Course

**Subject:** AGM-Agricultural Mechanization  
**Number:** 4021/6021  
**Effective Term:** Spring 2016  
**Title:**  
 Honors Course:  
 Add Honors Course:  
**Last Term Course was taught:** 999999

#### Brief Statement of Change Based on Assessment Results:

Change of contact hours on lab from 3 to 2 hours. We have been able to increase the efficiency of the laboratory experience, so 3 hours are no longer needed. We also shifted from a model where all work is completed in the lab to where some work is completed outside class.

#### Rationale for Changing a Course

- Strengthen Program Requirement(s)
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- General Education Modifications
- Other (Please specify.)

#### Change of Credit

From  
 Fixed Credit Course  
**Credit Hrs Contact Hrs**  
 0 3  
 Variable Credit Course  
**Credit Hrs Contact Hrs**  
**Min Max Min Max**  
 \_\_\_\_\_  
 To  
 Fixed Credit Course  
**Credit Hrs Contact Hrs**  
 0 2  
 Variable Credit Course  
**Credit Hrs Contact Hrs**  
**Min Max Min Max**

#### Change Catalog Description

**From** Non-credit laboratory to accompany AGM 4020.  
**To** Non-credit laboratory to accompany AGM 4020.

000016

**Learning Objectives**

The student will demonstrate ability to:

- Perform calculations as related to pipe flow, friction loss, pipe sizing, and pump selection.
- Design irrigation systems for various uses such as residential lawns and landscaping, turf grass, agricultural crops, etc.
- Identify various components of an irrigation system.

**Topical Outline**

Soil Moisture Soil Properties Soil Infiltration Uniformity Product Identification Sprinkler Systems Field trip #1: Greenhouse Irrigation Drip/Micro Systems Hydraulics/Pumps Field Trip #2: Turfgrass Irrigation Field Trip #3: Agricultural Irrigation Semester Project Presentations

**Evaluation**

4000

A 90 - 100

B 80 - 89

C 70 - 79

D 60 - 69

F &lt; 60

10% - Class participation, Attendance, Homework, Quizzes 20% - Semester Project 45 % Hour tests/final exam 25 % Lab

6000

A 90 - 100

B 80 - 89

C 70 - 79

F &lt; 70

10% - Class participation, Attendance, Homework, Quizzes 30% - Semester Project 45 % Hour tests/final exam 15 % Lab

**Syllabus**

Upload File: AGM+402+Syllabus-20150821145650.docx

**Description:** agm 4020 syllabus

**Form**

**User ID:** pagudel **Name:** Paula Agudelo

**Date:** 09/11/2015 **Number:** 8756



000017--

Paula Agudelo \_\_\_\_\_ August 21, 2015. \_\_\_\_\_  
Chair, Department Curriculum Committee Date

Roberto Zuzi \_\_\_\_\_ 21 Aug 2015 \_\_\_\_\_  
Department Chair Date

Robert J. Kowinski \_\_\_\_\_ 8/24/15 \_\_\_\_\_  
Chair, College Curriculum Committee Date

Dee Whitman \_\_\_\_\_ 8/24/15 \_\_\_\_\_  
College Dean Date

\_\_\_\_\_  
Director, Calhoun Honors College Date

John D. Stiff \_\_\_\_\_ 10/2/2015 \_\_\_\_\_  
Chair, Undergraduate Curriculum Committee Date

\_\_\_\_\_  
Chair, Graduate Curriculum Committee Date

Robert S. Jones \_\_\_\_\_ 10/4/2015 \_\_\_\_\_  
Provost Date

\_\_\_\_\_  
President Date

## AGM 4020 Landscape Drainage and Irrigation

1. *Meeting times:* Lecture class meets from 8:00 – 8:50 AM Tues. and Thur. in 230 McAdams and lab meets promptly at 12:20 M (Sec 1) in 230 McAdams and 12:30 T (Sec 2) in 232 McAdams, or as shown in course schedule.

2. *Goal:* Use basic soil-water-plant relationships to determine the need for and methods of irrigation and drainage. Topics include irrigation methods, drainage needs and drainage methods.

3. *Required textbook:* Principles of Irrigation. 3rd Edition. Irrigation Association. 2013.  
Other: Handouts will be supplied by instructor.

4. *Instructor:* Dr. Charles V. Privette, III, Ph.D., P.E.; Office - 247 McAdams, Phone - 656-6247, E-mail: [privett@clemson.edu](mailto:privett@clemson.edu); Office Hours 9:00-12:00 M, 1-4 W, or by appointment.  
*Lab TA:* Jacob Burkey; Office 146 McAdams, Phone – 656-4082, E-mail: [jburkey@clemson.edu](mailto:jburkey@clemson.edu).

### 5. Objectives:

The student will demonstrate ability to:

- Perform calculations as related to pipe flow, friction loss, pipe sizing, and pump selection.
- Design irrigation systems for various uses such as residential lawns and landscaping, turf grass, agricultural crops, etc.
- Identify various components of an irrigation system.

6. Testing will be by combination of open- and closed-book examination and will take place as shown on the attached syllabus. If it becomes necessary to change the date of a test, students will be informed as soon as possible.

7. Grading will be weighted as follows:

- 10% - Class participation, Attendance, Homework, Quizzes
- 20% - Semester Project
- 45 % - Hour tests/final exam
- 25 % - Lab

Letter grades will be assigned using a 10-point scale so that:

> 90	A
80-90	B
70-80	C
60-70	D
< 60	F

### 8. Attendance Policy:

Regular and punctual attendance at all classes is the responsibility of each student. College work proceeds at such a pace that regular attendance is necessary in order for the student to obtain maximum benefits from instruction. All absences are matters to be resolved between the instructor and student. If a student finds it necessary to be absent from class, it is the student's responsibility to make up resulting deficiencies.

**The instructor reserves the right to reduce the semester grade if a student has more than two**

**unexcused absences.** If it does become necessary to miss class, the student must take the responsibility to make up any work missed and obtain class notes from another student. **Makeup tests will not be given for quizzes or other unexcused tests if prior arrangements have not been made.**

**Mandatory First Day Class Attendance Policy:** All students are required to attend the first scheduled day of classes for which they are registered. A student who cannot attend the first class is responsible for contacting the instructor to indicate intent to remain in that class. If a student does not attend the first class meeting or make contact with the instructor by the second class meeting or the last day to add, whichever comes first, then the instructor may drop that student from the class.

*9. Homework:*

Homework is due on the date specified by the instructor. The grade for late work will be reduced by one letter grade for each weekday that it is late. All assignments that involve calculations must be done on 8 1/2" x 11" paper unless otherwise indicated such as computer printout. Sufficient information should be included in the problem solution so that it can easily be understood. It should be clear where each equation or number was obtained. Assumptions should be reasonable and clearly stated. Be sure to include units and/or conversions as appropriate.

If you need help on homework or other areas, please come by and see me, call, or email. I recommend either setting up an appointment with me after class or phoning ahead to be sure that I am in the office. Also, use e-mail as necessary.

*10. Semester Projects:*

Do not use a project from another class for the semester project. This project should be unique and original for this class. No grade will be given for a duplicate or modified project.

*11. Miscellaneous:*

I strive to be on time for class and anticipate that each student will do likewise. If I will be unavailable to teach class, I will try to inform you so that you won't come unnecessarily. If I am not in class within 10 minutes of the scheduled time, please check with Christi Leard in 244 McAdams. Then you are free to leave if I am not located.

Finally, I have tried to estimate the time required to cover various topics, but we may need to adjust the schedule somewhat. If it becomes clear that the date of an exam is inappropriate, you will be notified in time to prevent putting you at a disadvantage.

*12. Additional supplies:* Each student will need data storage devices in order to save data files and programs.

*13. Academic Integrity:* "As members of the Clemson University community, we have inherited Thomas Green Clemson's vision of this institution as a 'high seminary of learning.' Fundamental to this vision is a mutual commitment to truthfulness, honor, and responsibility, without which we cannot earn the trust and respect of others. Furthermore, we recognize that academic dishonesty detracts from the value of a Clemson degree. Therefore, we shall not tolerate lying, cheating, or stealing in any form."

*14. Office of Student Disability Services Statement:* "It is University policy to provide, on a flexible and individualized basis, reasonable accommodations to students who have disabilities. Students are encouraged to contact Student Disability Services to discuss their individual needs for accommodation."

### Spring 2014 Planned Schedule

Schedule for **AGM 4020**. (Lectures/lab subject to change.)

Lab Exercise	Lab Location	Tuesday	Thursday
			Introduction to Course
		Ch 1 Irrigation Systems (Turf)	Ch 1 Irrigation Systems (Ag)
<i>No Lab – MLK Day</i>		Ch 2 Soil Properties	Ch 2 Soil Properties
<i>Soil Moisture</i>	McAdams	Ch 2 Plant Requirements	Evapotranspiration
<i>Soil Properties</i>	McAdams	Ch 3 Water Sources & Precipitation Rates	Ch 4 Efficiency and Uniformity
<i>Soil Infiltration</i>	Turf Research Plots	Ch 6 Irrigation Components	<b>TEST 1</b>
<i>Uniformity</i>	Turf Research Plots	Ch 7 Irrigation Pipe Types	Ch 8 Hydraulics of Irrigations Systems – Terms and Energy
<i>Product Identification</i>	McAdams	Hydraulics of Irrigations Systems – Friction Loss	Hydraulics of Irrigations Systems – Friction Loss
<i>Sprinkler Systems</i>	McAdams	Hydraulics of Irrigations Systems –Pipe Sizing	Hydraulics of Irrigations Systems –Pipe Sizing - Examples
<i>Field trip #1: Greenhouse Irrigation</i>	Metrolina Greenhouses	Hydraulics of Irrigations Systems –Pipe Sizing - Examples	Ch 9 Pumps – Types and Terms
<b>Spring Break</b>			
<i>Drip/Micro Systems</i>	McAdams	Pumps – Sizing	Pumps – Sizing Example
<i>Hydraulics/Pumps</i>	McAdams	<b>Test 2 Hydraulics and Pumps</b>	Ch 10 Wire Sizing
<i>Field Trip #2: Turfgrass Irrigation</i>	Death Valley	Ch 5 Irrigation Scheduling	Controllers
<i>Field Trip #3: Agricultural Irrigation</i>	TBA	Misc. Topics (Chemigation, Fertigation, Filters etc)	Misc. Topics (Chemigation, Fertigation, Filters etc)
<i>Semester Project Presentations</i>	McAdams	<b>Finals Review</b>	<i>Semester Project Presentations</i>
		<b>Finals Week – Final Exam Friday May 2, 7:30 PM</b>	

## Change Major

**Major Name:** Biological Sciences  
**Degree:** Bachelor of Science  
**Effective Catalog Year:** 2016-2017

000021

- Change Major Name to:** BIOS  
 **Change Degree to:** Bachelor of Science  
 **Change Curriculum Requirements**  
 **Change General Education Requirements**  
 **Add, Change, or Delete Concentration(s)**  
 **Add, Change, or Delete Emphasis Area(s)**

**Curriculum Map:** Proposed BIOSC BS\_TOX\_16\_17-20150830174436.docx  
**Description:** Curriculum Map for Toxicology Emphasis Area  
**Additional Information:**  
**Description:**

### Summary/Explanation

In the Biological Sciences Toxicology Emphasis Area, BIOL 2110 (Introduction to Toxicology) is normally taught in the spring of sophomore year. To reflect that fact, we are switching BIOL 2110 from the fall the spring and a Social Science requirement from the spring to the fall to compensate. The changes are underlined on the attached curriculum map. This change only applies to the Toxicology Emphasis Area.

### Rationale for Change Major

- Strengthen Program Requirement(s)**  
 **Alignment of Student Learning Outcomes**  
 **Alternative Delivery of Content**  
 **Improve Time to Degree**  
 **Evolution of the Discipline**  
 **Changing Prerequisites**  
 **Address DWF Rates**  
 **General Education Modifications**  
 **Other (Please specify.)**

### Form

**User ID:** rjksn      **Name:** Robert Kosinski  
**Date:** 08/30/2015      **Number:**

000022

Robert J. Kasinski

8/30/15

Date

Chair, Department Curriculum Committee

*[Signature]*

8/30/15

Date

Department Chair

Robert J. Kasinski

9/10/15

Date

Chair, College Curriculum Committee

*[Signature]*

9/10/15

Date

College Dean

Director, Calhoun Honors College

10/2/2015

Date

*[Signature]*

Chair, Undergraduate Curriculum Committee

Date

Chair, Graduate Curriculum Committee

10/4/2015

Date

*[Signature]*

Provost

Date

President

Date

**PROPOSED**  
**B. S. BIOLOGICAL SCIENCES 2016-2017**  
**TOXICOLOGY EMPHASIS**

**FRESHMAN YEAR**

First Semester

Second Semester

BIOL 1010 Frontiers in Biol. I or.....	1(1,0)
BIOL 1100 Prin. of Biol. I <sup>1</sup> .....	5(4,3)
CH 1010 General Chemistry .....	4(3,3)
MATH 1060 Calculus of One Var. I .....	4(4,0)
Oral Communication Requirement <sup>2</sup> .....	<u>3</u>
	17

BIOL 1110 Prin. of Biol. II <sup>1</sup> .....	5(4,3)
CH 1020 General Chemistry .....	4(3,3)
ENGL 1030 Accelerated Composition.....	3(3,1)
Mathematical Sciences Requirement <sup>3</sup> .....	<u>3</u>
	15

**SOPHOMORE YEAR**

CH 2230 Organic Chemistry and.....	3(3,0)
CH 2270 Organic Chemistry Lab <sup>4,5</sup> .....	1(0,3)
GEN 3000 Fundamental Genetics <sup>6</sup> .....	3(3,0)
Organismal Diversity Requirement <sup>7</sup> .....	4
<b>Social Science Requirement<sup>8</sup> .....</b>	<b><u>3</u></b>
Elective .....	<u>2</u>
	16

BCHM 3050 Essential Elements of Bioch <sup>9</sup> .....	3(3,0)
<b>BIOL 2110 Introduction to Toxicology .....</b>	<b><u>3(3,0)</u></b>
BIOL 3350 Evolutionary Biology .....	3(3,0)
Major Requirement <sup>4,10</sup> .....	4
Elective .....	<u>3</u>
	16

**JUNIOR YEAR**

BIOL 4610 Cell Biology .....	3(3,0)
BIOL 4620 Cell Biology Laboratory.....	2(1,2)
ETOX 4300 Toxicology .....	3(3,0)
PHYS 2070 General Physics I and .....	3(3,0)
PHYS 2090 General Physics Lab I <sup>11</sup> .....	1(0,3)
Ecology Requirement <sup>12</sup> .....	<u>3</u>
	15

ENGL 3150 Scientific Writing and Comm. <sup>13</sup> .....	3(3,0)
PHYS 2080 General Physics II and .....	3(3,0)
PHYS 2100 General Physics II Lab <sup>14</sup> .....	1(0,2)
Arts and Humanities (Literature) Req. <sup>8</sup> .....	3
Functional Biol. Requirement <sup>15</sup> .....	3
Elective .....	<u>2</u>
	15

**SENIOR YEAR**

BIOL 4930 Senior Seminar or .....	2(2,0)
MICR 4930 Senior Seminar.....	2(2,0)
CH 3130 Quantitative Analysis .....	3(3,0)
CH 3170 Quantitative Analysis Lab.....	2(0,6)
Social Science Requirement <sup>8</sup> .....	3
Elective .....	<u>5</u>
	15

CH 4130 Chemistry of Aqueous Systems or.....	3(3,0)
ETOX 4210 Chemical Fate in Environ. ....	3(3,0)
Arts and Humanities (Non-Lit) Req. <sup>8</sup> .....	3
Toxicology Requirement <sup>16</sup> .....	3
Elective .....	<u>3</u>
	12

**Total Semester Hours = 121**

<sup>1</sup> BIOL 1100 and 1110 are strongly recommended; however, BIOL 1030/1050 may substitute for BIOL 1100 and BIOL 1040/1060 may substitute for BIOL 1110. The remaining 1-2 credit hours required must be satisfied by completing 1-2 extra credits.

<sup>2</sup> See General Education Requirements.

<sup>3</sup> MATH 1080, STAT 2300, or other approved coursework. See advisor. Medical/dental schools have different mathematics requirements.

<sup>4</sup> Most professional health sciences schools require the second semester of organic chemistry with laboratory, CH 2240/2280.

<sup>5</sup> CH 2010 and CH 2020 may substitute.

<sup>6</sup> GEN 3020 may substitute.

<sup>7</sup> At least one lecture and associated laboratory selected from BIOL 3010, 3020/3060, 3030/3070, 3040/3080, 3200, 4060/4070, 4250/4260.

<sup>8</sup> See General Education Requirements. Six of these credit hours must also satisfy the Cross-Cultural Awareness and the Science and Technology in Society Requirements.

<sup>9</sup> BCHM 3010 may substitute.

<sup>10</sup> Four credit hours must be selected from BIOL or MICR courses at the 3000-level or above, CH 2240/2280, or from the department-approved list.

<sup>11</sup> PHYS 1220/1240 may substitute.

<sup>12</sup> At least one course selected from BIOL 4410, 4420, 4430, 4460, 4700, or MICR 4010.

<sup>13</sup> ENGL 3140 may substitute.

<sup>14</sup> PHYS 2210/2230 may substitute

<sup>15</sup> At least one course selected from selected from BIOL 3160, 4010, 4080, 4590, 4750, or 4800.

<sup>16</sup> Any 4000-level ETOX course.

**Change Undergraduate Course**

000024

**Change a Course**

**Subject:** BCHM-Biochemistry  
**Number:** 4330  
**Effective Term:** Spring 2016  
**Title:** General Biochemistry Lab I

Honors Course:

 Add Honors Course:**Last Term Course was taught:** 201408**Brief Statement of Change Based on Assessment Results:**

We are changing the title of the lab course to more accurately reflect its association with BCHM 4310 Physical Approach to Biochemistry.

**Rationale for Changing a Course**

- Strengthen Program Requirement(s)  
 Alignment of Student Learning Outcomes  
 Alternative Delivery of Content  
 Improve Time to Degree  
 Evolution of the Discipline  
 Changing Prerequisites  
 Address DWF Rates  
 General Education Modifications  
 **Other (Please specify.)**

We are changing the title of this lab to indicate this is the lab that goes with BCHM 4310 Physical Approach to Biochemistry.

 **Change Catalog Title**

**From** General Biochemistry Laboratory I  
**To** Physical Approach to Biochemistry Laboratory

 **Change Transcript Title**

**From** General Biochemistry Lab I  
**To** Physical Biochemistry Lab

**Learning Objectives**

The student will be introduced to physical biochemistry laboratory research. The lab consists of basic experiments that introduce and illustrate select representative physical biochemistry experiments.

**Topical Outline**

Date Laboratory M T 8/25 8/26 Introduction Biochemical calculation Buffer preparation 9/1 9/2 Spectrophotometry 9/8 9/10 Enzyme Activity Assay 9/15 9/16 Partial Purification of E. coli Alkaline Phosphatase I Cell lysis and dialysis 9/22 9/23 Partial Purification of E. coli Alkaline Phosphatase II DEAE columns and AP assays 09/29 9/30 Partial Purification of E. coli Alkaline Phosphatase III AP assays and SDS-PAGE, Column packing for gel filtration 10/6 10/7 Gel Filtration Chromatography of E. coli Alkaline Phosphatase I 10/13 10/14 Gel Filtration Chromatography of E. coli Alkaline Phosphatase II 10/20 10/21 Enzyme Kinetics and Inhibition 10/27 10/28 Genomic DNA Isolation and Properties 11/3 11/4 FALL BREAK 11/10 11/11 Polymerase Chain Reaction/Database search 11/17 11/18 Recombinant DNA Ligations and transformations 11/24 11/25 Recombinant DNA Plasmid purification and restriction enzyme digests 12/1 12/2 Final Exam

**Evaluation**

Undergraduate

**A** 90 - 100  
**B** 80 - 89  
**C** 70 - 79  
**D** 60 - 69  
**F** < 60

Quizzes 15% Lab Reports 45% Final Exam 30% Instructor Assessment 10%

**Syllabus**



Upload File: 4330+Syllabus-2014 (2)-20150901161101.pdf

000025

**Form**

**User ID:** msehorn    **Name:** Michael Sehorn  
**Date:** 09/10/2015    **Number:** 9011

8/28/2015

Change Undergraduate Course - Curriculum & Course Change System

000026

8-27-2015

*Michael J. ...*

Chair, Department Curriculum Committee

Date

*Jill ...*

08/27/2015

Department Chair

Date

*Robert J. Kowinski*

9/10/15

Chair, College Curriculum Committee

Date

*Zed ...*

9/10/15

College Dean

Date

Director, Calhoun Honors College

Date

*John D. Stiff*

10/2/2015

Chair, Undergraduate Curriculum Committee

Date

Chair, Graduate Curriculum Committee

Date

*Robert ...*

10/4/2015

Provost

Date

President

Date

000027

## Change Undergraduate Course

### Change a Course

**Subject:** BCHM-Biochemistry  
**Number:** 4340  
**Effective Term:** Spring 2016  
**Title:** General Biochemistry Lab II

Honors Course:

Add Honors Course:

**Last Term Course was taught:** 201501

#### Brief Statement of Change Based on Assessment Results:

We are changing the title of this lab to be more specific about the topics covered in the course and to indicate that this course goes along with BCHM 4320.

### Rationale for Changing a Course

- Strengthen Program Requirement(s)  
 Alignment of Student Learning Outcomes  
 Alternative Delivery of Content  
 Improve Time to Degree  
 Evolution of the Discipline  
 Changing Prerequisites  
 Address DWF Rates  
 General Education Modifications  
 Other (Please specify.)

We are changing the title of this lab to indicate that this is the lab for BCHM 4320.

#### Change Catalog Title

**From** General Biochemistry Lab II  
**To** Biochemistry of Metabolism Lab

#### Change Transcript Title

**From** General Biochemistry Lab II  
**To** Biochemistry of Metabolism Lab

#### Change Catalog Description

**From** Continuation of BCHM 4330  
**To** Experiments to illustrate current methods used in metabolic biochemical research.

### Learning Objectives

The student will be introduced to metabolic biochemistry laboratory research. The lab consists of basic experiments that introduce and illustrate select representative experiments on the the topic of diet, metabolism, and stress using the budding yeast *Saccharomyces cerevisiae* as a model organism.

### Topical Outline

Jan 12/13 No Lab Jan 19/20 No Lab (MLK Holiday) Week 1 Jan 26/27 Safety Training, Lab Overview, Practice Basic Methods Week 2 Feb 2/3 Metabolite Assays 1 (pH & EtOH) Week 3 Feb 9/10 Metabolite Assays 2 (Ammonia & ROS) Week 4 Feb 16/17 Stress Testing (Heat & Salt); Replica Streak R&W colonies Week 5 Feb 23/24 Stress Testing (H<sub>2</sub>O<sub>2</sub>); Colony PCRs of R&W colonies Week 6 Mar 2/3 Gels of Colony PCRs Week 7 Mar 9/10 Indep. Project PPTs & Protocol Due Week 8 Mar 16/17 No Lab (Spring Break) Week 9 Mar 23/24 Independent Project; Midterm Lab Report Due Week 10 Mar 30/31 Independent Project Week 11 Apr 6/7 Independent Project Week 12 Apr 13/14 Independent Project Week 13 Apr 20/21 Final Oral Presentations; Final Lab Report Due

### Evaluation

Undergraduate

**A** 90 - 100  
**B** 80 - 89  
**C** 70 - 79

**D** 60 - 69

**F** < 60

007028

25% Exams 25% Participation Attendance in lab and active participation, 15% Quizzes (~6 in-lab quizzes in this course), 20% Worksheets In-class worksheets, and 15% Midterm Research Paper

**Syllabus**

Upload File: BCHM 4340 MetabLab 2015-20150901162132.pdf

**Form**

**User ID:** msehorn **Name:** Michael Sehorn

**Date:** 09/10/2015 **Number:** 9010

8/28/2015

Change Undergraduate Course - Curriculum & Course Change System

003029

Michael [Signature] 8-27-2015  
 Chair, Department Curriculum Committee Date

Michael [Signature] 08/27/2015  
 Department Chair Date

Robert J. Kowinski 9/10/15  
 Chair, College Curriculum Committee Date

Red [Signature] 9/10/15  
 College Dean Date

\_\_\_\_\_  
 Director, Calhoun Honors College Date

John D. [Signature] 10/3/2015  
 Chair, Undergraduate Curriculum Committee Date

\_\_\_\_\_  
 Chair, Graduate Curriculum Committee Date

Robert [Signature] 10/4/2015  
 Provost Date

\_\_\_\_\_  
 President Date

000030

## Change Undergraduate Course

### Change a Course

**Subject:** BCHM-Biochemistry  
**Number:** 4430  
**Effective Term:** Spring 2016  
**Title:** Mol Basis Disease

Honors Course:

Add Honors Course:

**Last Term Course was taught:** 201408

#### Brief Statement of Change Based on Assessment Results:

We are removing the word 'course' in the Preq as it is unnecessary and not consistent with the description of other BCHM courses. We are also adding the 'with a C or better' to including the BCHM courses.

### Rationale for Changing a Course

- Strengthen Program Requirement(s)
- Alignment of Student Learning Outcomes
- Alternative Delivery of Content
- Improve Time to Degree
- Evolution of the Discipline
- Changing Prerequisites
- Address DWF Rates
- General Education Modifications
- Other (Please specify.)

### Change Prerequisite(s) / Corequisite(s)

**From** BCHM 3010 or BCHM 3050; and GEN 3000 or GEN 3020; each course with a C or better.  
**To** BCHM 3010 or BCHM 3050 with a C or better; and GEN 3000 or GEN 3020 with a C or better.

### Syllabus

Upload File: BCHM 4430 syllabus 2014-20150827194649.docx

### Form

**User ID:** msehorn **Name:** Michael Sehorn  
**Date:** 09/10/2015 **Number:** 9012

8/28/2015

Change Undergraduate Course - Curriculum & Course Change System

000031

*Michael J. ...*

Chair, Department Curriculum Committee

8-27-2015

Date

*Melvin ...*

Department Chair

08/27/2015

Date

*Robert J. Kaurishi*

Chair, College Curriculum Committee

9/10/15

Date

*Joe McIntire*

College Dean

9/10/15

Date

Director, Calhoun Honors College

Date

*John D. Stiff*

Chair, Undergraduate Curriculum Committee

10/2/2015

Date

Chair, Graduate Curriculum Committee

Date

*Robert S. Jones*

Provost

10/4/2015

Date

President

Date

# Change Undergraduate Course

000032

## Change a Course

Subject: BCHM-Biochemistry  
 Number: 4910  
 Effective Term: Spring 2016  
 Title: Dir Research in Biochemistry  
 Honors Course: BCHM 4910

Add Honors Course:

Last Term Course was taught: 201501

### Brief Statement of Change Based on Assessment Results:

We are changing the title modifier to variable title to allow more accurate course titles to be used. We are adding a lab fee to help cover the cost of supplies used by the student.

## Rationale for Changing a Course

- Strengthen Program Requirement(s)
- Alignment of Student Learning Outcomes
- Alternative Delivery of Content
- Improve Time to Degree
- Evolution of the Discipline
- Changing Prerequisites
- Address DWF Rates
- General Education Modifications
- Other (Please specify.)

Variable title allows a more accurate course title to be used. The lab fee will help cover the cost of supplies used by the student.

## Change Schedule Type

- | From  | To   |
|---|--|
| <input type="checkbox"/> Field Course                       | <input type="checkbox"/> Field Course            |
| <input type="checkbox"/> Independent Study                  | <input type="checkbox"/> Independent Study       |
| <input type="checkbox"/> Internship                         | <input type="checkbox"/> Internship              |
| <input checked="" type="checkbox"/> Lab No Fee              | <input type="checkbox"/> Lab No Fee              |
| <del><input checked="" type="checkbox"/> Lab With Fee</del> | <input checked="" type="checkbox"/> Lab With Fee |
| <input type="checkbox"/> Lecture                            | <input type="checkbox"/> Lecture                 |
| <input type="checkbox"/> Other                              | <input type="checkbox"/> Other                   |
| <input type="checkbox"/> Seminar                            | <input type="checkbox"/> Seminar                 |
| <input type="checkbox"/> Studio                             | <input type="checkbox"/> Studio                  |
| <input type="checkbox"/> Tutorial                           | <input type="checkbox"/> Tutorial                |

## Change Course Modifier

- | From   | To   |
|--|--|
| <input type="checkbox"/> Variable Title        | <input checked="" type="checkbox"/> Variable Title |
| <input type="checkbox"/> Creative Inquiry      | <input type="checkbox"/> Creative Inquiry          |
| <input checked="" type="checkbox"/> Repeatable | <input checked="" type="checkbox"/> Repeatable     |
| Max Credits: 20                                | Max Credits: 20                                    |

## Learning Objectives

Philosophically, this course is designed to teach students the process of science. Through a mentored research experience incorporating hypothesis-driven research conducted in the mentor's laboratory, students will learn how to ask questions that aid in the proper experimental design and to competently execute experimental protocols.

## Topical Outline

During the course of the semester, all students will learn proper experimental documentation techniques, organizational strategies and how to interpret and communicate the experimental results. In general, this course serves as a foundation for future career aspirations in many disciplines. Inherent in this experience is the opportunity for the student to determine if experimental scientific research is a suitable career path prior to attending graduate or professional school. Students may also learn how to professionally present their results in the three most common forms of scientific expression—poster,



000033

oral and written.

**Evaluation**

Undergraduate

- A 90 - 100
- B 80 - 89
- C 70 - 79
- D 60 - 69
- F < 60

30% Laboratory Notebook 35% Laboratory Technique and Citizenship 25% Formal Presentation of Research 10% Meeting Deadlines and Attendance at Research Symposium (at discretion of 4910 Coordinator and Research Mentor)

**Syllabus**

Upload File: Jim+MorrisSyllabus+for+GEN+BIOCH+491+%283%29-20150910210301.pdf

**Form**

User ID: msehorn Name: Michael Sehorn  
Date: 09/10/2015 Number: 10058

8/28/2015

Delete Undergraduate Course - Curriculum & Course Change System

000034

*Michael Shum*

*8-27-2015*

Chair, Department Curriculum Committee

Date

*Julhaq Marcobz*

*08/27/2015*

Department Chair

Date

*Robert J. Karcinski*

*9/10/15*

Chair, College Curriculum Committee

Date

*Red Whitman*

*9/10/15*

College Dean

Date

Director, Calhoun Honors College

Date

*John D. Stiff*

*10/2/2015*

Chair, Undergraduate Curriculum Committee

Date

Chair, Graduate Curriculum Committee

Date

*Robert S. Jones*

*10/4/2015*

Provost

Date

President

Date

000035

## Change Undergraduate Course

### Change a Course

**Subject:** GEN-Genetics  
**Number:** 4500  
**Effective Term:** Spring 2016  
**Title:** Comparative Genetics

Honors Course:

Add Honors Course:

**Last Term Course was taught:** 201408

#### Brief Statement of Change Based on Assessment Results:

We are removing the Preq or concurrent enrollment for GEN 4400 as this is not necessary to do well in the course.

### Rationale for Changing a Course

- Strengthen Program Requirement(s)
- Alignment of Student Learning Outcomes
- Alternative Delivery of Content
- Improve Time to Degree
- Evolution of the Discipline
- Changing Prerequisites
- Address DWF Rates
- General Education Modifications
- Other (Please specify.)

### Change Prerequisite(s) / Corequisite(s)

**From** GEN 4200 with a C or better. Preq or concurrent enrollment: GEN 4400.  
**To** GEN 4200 with a C or better.

### Syllabus

Upload File: 4500+Syllabus (2)-20150828110721.pdf

### Form

**User ID:** msehorn **Name:** Michael Sehorn  
**Date:** 09/10/2015 **Number:** 9063

8/28/2015

Change Undergraduate Course - Curriculum & Course Change System

8-27-2015 900036

*Michael J. ...*

Chair, Department Curriculum Committee

Date

*Kella ...*

Department Chair

Date

*Robert J. Kocinski*

Chair, College Curriculum Committee

Date

*Dee Whitmer*

College Dean

Date

Director, Calhoun Honors College

*John D. ...*

Chair, Undergraduate Curriculum Committee

Date

*10/2/2015*

Chair, Graduate Curriculum Committee

Date

*Robert ...*

Provost

Date

*10/4/2015*

President

Date

000037

## Change Undergraduate Course

### Change a Course

**Subject:** GEN-Genetics  
**Number:** 4700  
**Effective Term:** Spring 2016  
**Title:** Human Genetics  
**Honors Course:**  
 Add Honors Course:

**Last Term Course was taught:** 201501

#### Brief Statement of Change Based on Assessment Results:

We are adding the 'C or better' to the Preq for both the GEN and BCHM Preq courses.

### Rationale for Changing a Course

- Strengthen Program Requirement(s)
- Alignment of Student Learning Outcomes
- Alternative Delivery of Content
- Improve Time to Degree
- Evolution of the Discipline
- Changing Prerequisites
- Address DWF Rates
- General Education Modifications
- Other (Please specify.)

### Change Prerequisite(s) / Corequisite(s)

**From** BCHM 3010 or BCHM 3050; and GEN 3000 and GEN 3020.  
**To** BCHM 3010 or BCHM 3050 with a C or better; <sup>and</sup> GEN 3000 <sup>and</sup> GEN 3020 with a C or better.

### Syllabus

Upload File: lclark444286spring2015-20150828114112.pdf

### Form

**User ID:** msehorn    **Name:** Michael Sehorn  
**Date:** 09/10/2015    **Number:** 9032

8/28/2015

Change Undergraduate Course - Curriculum & Course Change System

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8-27-2015

*Michael J. ...*

Chair, Department Curriculum Committee

Date

*Kellan Marolt*

8/27/2015

Department Chair

Date

*Robert J. Kounicki*

9/10/15

Chair, College Curriculum Committee

Date

*Zed Whitmer*

9/10/15

College Dean

Date

Director, Calhoun Honors College

Date

*John D. Stiff*

10/2/2015

Chair, Undergraduate Curriculum Committee

Date

Chair, Graduate Curriculum Committee

Date

*Robert S. Jones*

10/4/2015

Provost

Date

President

Date

000039

## Change Undergraduate Course

### Change a Course

**Subject:** GEN-Genetics  
**Number:** 4910  
**Effective Term:** Spring 2016  
**Title:** Directed Research in Genetics  
**Honors Course:** GEN 4910

Add Honors Course:

**Last Term Course was taught:** 201501

#### Brief Statement of Change Based on Assessment Results:

We are changing the title of the course to allow a better description of the course to be used. We are adding a lab fee to help cover the cost of supplies used by the student.

### Rationale for Changing a Course

- Strengthen Program Requirement(s)  
 Alignment of Student Learning Outcomes  
 Alternative Delivery of Content  
 Improve Time to Degree  
 Evolution of the Discipline  
 Changing Prerequisites  
 Address DWF Rates  
 General Education Modifications  
 Other (Please specify.)

We are change the title to allow for a better description of the course. We are adding a lab fee to cover the cost of supplies used by the students.

### Change Schedule Type

- | From   | To   |
|--|--|
| <input type="checkbox"/> Field Course            | <input type="checkbox"/> Field Course            |
| <input type="checkbox"/> Independent Study       | <input type="checkbox"/> Independent Study       |
| <input type="checkbox"/> Internship              | <input type="checkbox"/> Internship              |
| <input checked="" type="checkbox"/> Lab No Fee   | <input type="checkbox"/> Lab No Fee              |
| <input checked="" type="checkbox"/> Lab With Fee | <input checked="" type="checkbox"/> Lab With Fee |
| <input type="checkbox"/> Lecture                 | <input type="checkbox"/> Lecture                 |
| <input type="checkbox"/> Other                   | <input type="checkbox"/> Other                   |
| <input type="checkbox"/> Seminar                 | <input type="checkbox"/> Seminar                 |
| <input type="checkbox"/> Studio                  | <input type="checkbox"/> Studio                  |
| <input type="checkbox"/> Tutorial                | <input type="checkbox"/> Tutorial                |

### Change Course Modifier

- | From   | To   |
|--|--|
| <input type="checkbox"/> Variable Title        | <input checked="" type="checkbox"/> Variable Title |
| <input type="checkbox"/> Creative Inquiry      | <input type="checkbox"/> Creative Inquiry          |
| <input checked="" type="checkbox"/> Repeatable | <input checked="" type="checkbox"/> Repeatable     |
| Max Credits: 20                                | Max Credits: 20                                    |

### Learning Objectives

Philosophically, this course is designed to teach students the process of science. Through a mentored research experience incorporating hypothesis-driven research conducted in the mentor's laboratory, students will learn how to ask questions that aid in the proper experimental design and to competently execute experimental protocols.

### Topical Outline

During the course of the semester, all students will learn proper experimental documentation techniques, organizational strategies and how to interpret and communicate the experimental results. In general, this course serves as a foundation for future career aspirations in many disciplines. Inherent in this experience is the opportunity for the student to determine if experimental scientific research is a suitable career path prior to attending graduate or professional school. Students may also learn how to professionally present their results in the three most common forms of scientific expression—poster,

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oral and written.

**Evaluation**

Undergraduate

A 90 - 100

B 80 - 89

C 70 - 79

D 60 - 69

F &lt; 60

30% Laboratory Notebook 35% Laboratory Technique and Citizenship 25% Formal Presentation of Research 10% Meeting Deadlines and Attendance at Research Symposium (at discretion of 4910 Coordinator and Research Mentor)

**Syllabus**

Upload File: Jim+MorrisSyllabus+for+GEN+BIOCH+491+%283%29-20150828113929.pdf

**Form**

User ID: msehorn Name: Michael Sehorn

Date: 09/10/2015 Number: 9019



8/28/2015

Change Undergraduate Course - Curriculum & Course Change System

000041

*Michael Shea*

8-27-2015

Chair, Department Curriculum Committee

Date

*William Maczek*

08/27/2015

Department Chair

Date

*Robert J. Kosinski*

9/10/15

Chair, College Curriculum Committee

Date

*Zed Whitmer*

9/10/15

College Dean

Date

Director, Calhoun Honors College

Date

*John D. Hoff*

10/2/2015

Chair, Undergraduate Curriculum Committee

Date

Chair, Graduate Curriculum Committee

Date

*Robert S. Jones*

10/4/2015

Provost

Date

President

Date

## Delete Undergraduate Course

### Delete a Course

**Subject:** GEN-Genetics  
**Number:** 4950  
**Effective Term:** Spring 2016  
**Title:** Insect Biotechnology

Delete Honors Course:

**Last Term Course was taught:** 201108

**Brief Statement of Change Based on Assessment Results:**

This course has not been taught in many years and there is no plan to teach it in the future.

### Rationale for Delete Course

- Strengthen Program Requirement(s)
- Alignment of Student Learning Outcomes
- Alternative Delivery of Content
- Improve Time to Degree
- Evolution of the Discipline
- Changing Prerequisites
- Address DWF Rates
- General Education Modifications
- Other (Please specify.)

### Form

**User ID:** mschorn **Name:** Michael Schorn  
**Date:** 08/28/2015 **Number:** 9064

8/28/2015

Delete Undergraduate Course - Curriculum & Course Change System

000043

*Michael St...*  
Chair, Department Curriculum Committee

8-27-2015

Date

*Michael Marcol*  
Department Chair

8-27-2015

Date

*Robert J. Kaminiski*  
Chair, College Curriculum Committee

9/10/15

Date

*Ted Whitmore*  
College Dean

9/10/15

Date

Director, Calhoun Honors College

Date

*John D. Stiff*  
Chair, Undergraduate Curriculum Committee

10/2/2015

Date

Chair, Graduate Curriculum Committee

Date

*Robert S. Gones*  
Provost

10/4/2015

Date

President

Date