

AGRICULTURAL FACULTY MEETING

Thursday, March 24, 2022

3:00 p.m. – 4:30 p.m.

Zoom: <https://purdue->

[edu.zoom.us/j/97105744480?pwd=NUtjcUV6MjJBVXJsa25QNmdYbXZGQT09](https://purdue-edu.zoom.us/j/97105744480?pwd=NUtjcUV6MjJBVXJsa25QNmdYbXZGQT09)

Meeting ID: 971 0574 4480

Passcode: 113883

1. Call to Order – Dean Karen Plaut
2. Approval of Agenda
3. COACHE survey – Haley Oliver
4. Digital Innovation in Agri-Food Systems Laboratory (DIAL) – Alan Gray
5. Document X – Proposed Revisions of the Agricultural Faculty Constitution – Joe Anderson
6. Consent Agenda – Action Items

Approval of Minutes of December 1, 2021 Agricultural Faculty Meeting

Document XI – Agricultural and Biological Engineering

Document XII – Agriculture

Document XIII – Biochemistry

Document XIV- Botany and Plant Pathology

Document XV – Food Science

Document XVI – Forestry and Natural Resources

Document XVII – Curriculum and Student Relations Committee

Part I – Updates to AP Credits

Part II – Updates to core curriculum lists

Part III – Deletions of courses

Part IV – Modifications of courses

Approval of 2022 May and August Degree Candidates

7. Memorial Resolutions
8. Report Items

Standing Committee Reports:

Agenda and Policy – Joseph Anderson

Area Promotions – Karen Plaut

Curriculum and Student Relations – Scott Downey

Grade Appeals – Christine Wilson

University Senate Report – Robert Pruitt

Dean's Comments – Karen Plaut

9. Other Business

Department of Agricultural and Biological Engineering

Proposed Course and Curricular Changes
(College of Agriculture Undergraduate/Graduate)

A. COURSES TO BE ADDED

Prefix and Course Number: ABE 44400

Long Title: Design and Advanced Manufacturing Processes for Internal Combustion Engines

Prefix and Course Number: ABE 50501

Long Title: Particle, Powder and Compact Characterization

Prefix and Course Number: ABE 50502

Long Title: Particle, Powder and Compact Characterization Laboratory

Prefix and Course Number: ASM 44400

Long Title: Advanced Manufacturing Processes and Testing for Internal Combustion Engines

Prefix and Course Number: ASM 51100

Long Title: Foundations in Homeland Security Studies

Prefix and Course Number: ASM 51200

Long Title: Managing Resources and Applications for Homeland Security

B. CURRICULAR CHANGES

None

Supporting Document – ABE 44400

- A. Short Title:** IC Engine Design & Manufacture
- B. Semester(s) Offered:** Fall and Spring
- C. Schedule Type and Hours:** LEC/50/1/16 and LAB/150/2/16
- D. Credits:** 3.0
- E. Justification for the course:** This class will enhance the capabilities of our graduates to participate in modern manufacturing enterprises at the entry-level by providing hands-on experience in the conversion of CAD drawings into physical parts using the common methodologies of industry. ABE is uniquely positioned to offer this instruction as off-road power units are an essential feature of the equipment used in our industry, and the newly updated ABE shop contains a full collection of traditional manual machine tools and a new CNC lathe and a new CNC 5-axis mill. ABE students will gain experience designing individual parts, reviewing and revising those designs, and then machining those individual pieces. This course will prepare students for a variety of positions in manufacturing and manufacturing support. The course will be cross-listed with ASM 44400.
- F. Expected Impact to other Programs:** N/A
- G. Course Description for University Catalog:** This course introduces the manufacture and assembly of machined piece parts into a functional assembly. The creation of a prototype internal combustion engine will be utilized as the base project for the course, and students will design and create the parts and final assemblies. Students will be given a background on the process flow of modern manufacturing by general metal machining processes, manual machine tool operation, digital machine tool programming, numerical machine tool operation, the measurement of critical machining output variables, and the assembly of piece parts into subassemblies and final products. Course participants will work as a team to develop their production parts, final presentation, and final report.
- H. Prerequisites (Pre-Reqs/Co-Reqs/concurrent pre-req):** ABE 32000 & ABE 33000 or Instructor's Permission
- I. Restrictions:** None.

J. Learning Outcomes: Upon the completion of the course, students shall be able to:

1) Identify and understand the forces present on various components of internal combustion engines (ABET 1); 2) Be able to design specific components for internal combustion engines and plan for their manufacture (ABET 1); 3) Identify the sequence of machining operations for the construction of engine components (ABET1); 4) Be able to download specific instructions to numerically controlled machines to execute manufacturing instructions for specific parts (ABET 1); 5) Be able to perform specific operations on traditional machine tools to create specific engine parts (ABET 1); 6) Understand how to measure critical dimensions in manufactured parts (ABET 1); 7) Understand the concepts of component assembly to create a functional device (ABET 2); 8) Be able to understand the safety concerns of machineshops and how to mitigate danger to personnel and equipment (ABET 4); 9) Be able to spread workloads between colleagues, assist one another in self-learning, and collaborate to meet collective course objectives (ABET 5); 10) Understand the concepts of professionalism, ethical responsibility, and integrity when applied to technical projects (ABET 4); and 11) Enhance written and oral communication skills through the production of a comprehensive final report and summary technical presentation (ABET 3).

K. If Applicable to College of Agriculture Core

This course will will not be nominated for inclusion on College of Agriculture Core.

L. Instructor Information: Robert M. Stwalley III

M. Link to curriculog (if applicable):

<https://purdue.curriculog.com/proposal:20364/form>

Supporting Document – ABE 50501

- A. Short Title:** Part, Powd, & Comp Charact
- B. Semester(s) Offered:** Spring (every other odd Spring term)
- C. Schedule Type and Hours:** LEC/75/2/11
- D. Credits:** 2.0
- E. Justification for the course:** Particulate materials are common in industrial practice. For example, approximately one-half of the products and at least three-quarters of the materials in the chemical industry are in granular form. Despite their ubiquity, a recent study found that 80% of solids processing facilities had solids handling difficulties. Furthermore, these facilities typically only reached between 40-50% of their design capacity. Unfortunately, most engineering students in the U.S. have no exposure to particulate materials. This course is the only one at Purdue to describe the physical and mechanical characteristics of particulate materials and the methods used to measure these properties. This course is foundational since other particle-related courses will build on this knowledge. This course is part of a goal to provide the knowledge, tools, and trained workforce needed to effectively design and manufacture particulate products. The course will be cross-listed with ME 53201.
- F. Expected Impact to other Programs:** N/A
- G. Course Description for University Catalog:** The goal of this course is to familiarize students with the properties and methods used to characterize the physical and mechanical behavior of particles, granules, and compacts with the intention of using these properties for process and performance design.
- H. Requisites (Pre-Reqs/Co-Reqs/concurrent pre-req):** None.
- I. Restrictions:** Upper-Division (senior-status and above)
- J. Learning Outcomes:** 1. Define and describe the significant properties of particles, granules, powders, and compacts. 2. Explain how these properties are measured. 3. Illustrate how these properties influence the performance of particle-based products and manufacturing processes. 4. Create a computational or a web-based tool that demonstrates or implements concepts from the course.

K. If Applicable to College of Agriculture Core

This course will will not be nominated for inclusion on College of Agriculture Core.

L. Instructor Information: Dr. Carl Wassgren and Dr. Kingsly Ambrose

M. Link to curriculog (if applicable):

<https://purdue.curriculog.com/proposal:20397/form>

Supporting Document – ABE 50502

A. **Short Title:** Part Powd & Comp Charact Lab

B. **Semester(s) Offered:** Spring (every other odd Spring term)

C. **Schedule Type and Hours:** LAB/75/2/5

D. **Credits:** 1.0

E. **Justification for the course:** Particulate materials are common in industrial practice. For example, approximately one-half of the products and at least three-quarters of the materials in the chemical industry are in granular form. Despite their ubiquity, a recent study found that 80% of solids processing facilities had solids handling difficulties. Furthermore, these facilities typically only reached between 40- 50% of their design capacity. Unfortunately, most engineering students in the U.S. have no exposure to particulate materials. This course is the only one at Purdue to provide hands-on laboratory experiments for measuring the physical and mechanical characteristics of particulate materials. This course is foundational since other particle-related courses will build on this knowledge. This course is part of a goal to provide the knowledge, tools, and trained workforce needed to effectively design and manufacture particulate products. This course will be cross-listed with 53202.

F. **Expected Impact to other Programs:** N/A

G. **Course Description for University Catalog:** The goal of this laboratory course is to train students on state-of-the-art laboratory equipment used to measure the mechanical properties of particles, granules, powders, and compacts.

H. **Requisites (Pre-Reqs/Co-Reqs/concurrent pre-req):** ME 53101/ABE 50501 (or as co-requisite)

I. **Restrictions:** Upper Division (senior status and above)

J. **Learning Outcomes:** 1. Follow laboratory safety guidelines. 2. Operate common laboratory equipment and follow standard operating procedures used to measure the mechanical properties of particles, granules, powders, and compacts. 3. As part of a team, plan and perform measurements, analyze results, and summarize the results in a written report.

K. **If Applicable to College of Agriculture Core**

This course will **will not** be nominated for inclusion on College of Agriculture Core.

L. **Instructor Information:** Dr. Carl Wassgren and Dr. Kingsly Ambrose

M. **Link to curriculog (if applicable):**

<https://purdue.curriculog.com/proposal:20398/form>

Supporting Document – ASM 44400

- A. Short Title:** IC Engine Manufacture & Test
- B. Semester(s) Offered:** Fall and Spring
- C. Schedule Type and Hours:** LEC/50/1/16 and LAB/150/2/16
- D. Credits:** 3.0
- E. Justification for the course:** This class will enhance the capabilities of our graduates to participate in modern manufacturing enterprises at the entry-level by providing hands-on experience in the conversion of CAD drawings into physical parts using the common methodologies of industry. ABE is uniquely positioned to offer this instruction as off-road power units are an essential feature of the equipment used in our industry, and the newly updated ABE shop contains a full collection of traditional manual machine tools and a new CNC lathe and a new CNC 5-axis mill. ASM students will gain experience crafting individual parts, mating those parts, and testing the functionality of their assembly. This course will prepare students for a variety of positions in manufacturing and manufacturing support. The course will be cross-listed with ABE 44400.
- F. Expected Impact to other Programs:** N/A
- G. Course Description for University Catalog:** This course introduces the manufacture and assembly of machined piece parts into a functional assembly. The creation of a prototype internal combustion engine will be utilized as the base project for the course, and students will create and test the parts and final assembly. Students will be given a background on the process flow of modern manufacturing by general metal machining processes, manual machine tool operation, digital machine tool programming, numerical machine tool operation, the measurement of critical machining output variables, and the assembly of piece parts into subassemblies and final products. Course participants will work as a team to develop their production parts, final presentation, and final report.
- H. Requisites (Pre-Reqs/Co-Reqs/concurrent pre-req):** ASM 21100 & ASM 34500 or Instructor's Permission
- I. Restrictions:** None.

- J. Learning Outcomes:** Upon the completion of the course, students shall be able to:
- 1) Identify the sequence of machining operations for the construction of engine components;
 - 2) Be able to download specific instructions to numerically controlled machines to execute manufacturing instructions for specific parts;
 - 3) Be able to perform specific operations on traditional machine tools to create specific engine parts;
 - 4) Understand how to measure critical dimensions in manufactured parts;
 - 5) Understand the concepts of component assembly to create a functional device;
 - 6) Know the critical functionalities of an assembled product and be able to test its performance;
 - 7) Be able to understand the safety concerns of machine shops and how to mitigate danger to personnel and equipment;
 - 8) Be able to spread workloads between colleagues, assist one another in self-learning, and collaborate to meet collective course objectives;
 - 9) Understand the concepts of professionalism, ethical responsibility, and integrity when applied to technical projects; and
 - 10) Enhance written and oral communication skills through the production of a comprehensive final report and summary technical presentation.

K. If Applicable to College of Agriculture Core

This course will will not be nominated for inclusion on College of Agriculture Core.

L. Instructor Information: Robert M. Stwalley III

M. Link to curriculog (if applicable):

<https://purdue.curriculog.com/proposal:20369/form>

Supporting Document – ASM 51100

A. Short Title: Found Homeland Sec Std

B. Semester(s) Offered: Fall

C. Schedule Type and Hours: LEC/75/2/16

D. Credits: 3.0

E. Justification for the course: This course has been taught for more than a decade as a with a temporary 59100 listing. ASM students and CNIT students both take this course. ASM 51100 would be co-listed with CNIT 51100, but the separate listings are useful in differentiation among students and their degree requirements.

F. Expected Impact to other Programs: N/A

G. Course Description for University Catalog: An interdisciplinary course addressing prevention, mitigation, preparation, response, and recovery from catastrophic events that threaten private and public sector resources and infrastructures. Course contents will include: characteristics of security; personal/corporate perspectives; identification of assets; assessing cost/benefits of protecting assets; risk assessment and risk management; crisis decision making; emergency management resources and response infrastructures; best practices in emergency management and risk and crisis communication; business continuity; and the importance of a collaborative response. Case studies include the 9-11 attacks and Hurricane Katrina. External experts will present and career opportunities will be discussed.

H. Requisites (Pre-Reqs/Co-Reqs/concurrent pre-req): None

I. Restrictions: May not be enrolled as the following Classifications:

Freshman: 0 - 14 hours

Freshman: 15 - 29 hours

Sophomore: 30 - 44 hours

Sophomore: 45 - 59 hours

J. Learning Outcomes: 1. Understand principles and interdisciplinary issues within Homeland Security. 2. Apply information and information systems to homeland security issues. 3. Apply phases of emergency management to business in difference

areas. 4. As an individual and part of a group, perform risk assessment and apply to various fields. 5. Prepare professional homeland security communications in students various home field of study.

K. If Applicable to College of Agriculture Core

This course will **will not** be nominated for inclusion on College of Agriculture Core.

L. Instructor Information: Co-taught by Drs. J. Eric Dietz (CNIT), William Field (ABE), Shawn Ehlers (ABE)

M. Link to curriculog (if applicable):

<https://purdue.curriculog.com/proposal:20370/form>

Supporting Document – ASM 51200

- A. Short Title:** Homeland Sec. Resc & App Mgmt
- B. Semester(s) Offered:** Spring
- C. Schedule Type and Hours:** LEC/75/2/16
- D. Credits:** 3.0
- E. Justification for the course:** Provide Agriculture students insight to emergency preparedness, mitigation, response and recovery. Also, partially fulfills requirements for ASM concentration of “AgroSecurity”. This course will be cross-listed with CNIT 51200.
- F. Expected Impact to other Programs:** N/A
- G. Course Description for University Catalog:** An interdisciplinary course providing examples and practice in applying and managing the resources, including technologies, used in the private and public sectors for homeland security programs. Course contents will include: terrorism; corporate security; biosecurity; health care preparedness; personal/community preparedness; risk transfer; and information security and privacy. Additional content includes discussion of local, state, and federal preparedness programs issues in the public/private sectors that are designed to ensure survival during a continuum of emergency events, and continued practice in using collaborative application of team-building skills.
- H. Requisites (Pre-Reqs/Co-Reqs/concurrent pre-req):** None
- I. Restrictions:** May not be enrolled as the following Classifications:
Freshman: 0 - 14 hours
Freshman: 15 - 29 hours
Sophomore: 30 - 44 hours
Sophomore: 45 - 59 hours
Junior: 60 - 74 hours
Junior: 75 - 89 hours
- J. Learning Outcomes:** 1. Apply business continuity and redundancy in information systems to disasters and emergencies. 2. Apply examples and practice in homeland

security. 3. Understand resource process to solve homeland security problems. 4. Interact with subject matter experts and apply homeland security principles.

K. If Applicable to College of Agriculture Core

This course will will not be nominated for inclusion on College of Agriculture Core.

L. Instructor Information: Co-taught by Drs. J. Eric Dietz (CNIT), William Field (ABE), Shawn Ehlers (ABE)

M. Link to curriculog (if applicable):

<https://purdue.curriculog.com/proposal:20390/form>

College of Agriculture (no department)

Proposed Course and Curricular Changes
(College of Agriculture Undergraduate/Graduate)

A. COURSES TO BE ADDED

None

B. CURRICULAR CHANGES

Revision to Data Driven Agriculture Minor

https://catalog.purdue.edu/preview_program.php?catoid=14&poid=19923

Justification/Rationale: The Data Driven Agriculture minor was constructed to:
1. Counsel students (via advisor recommendations) regarding wise choices to prepare for an increasingly data driven world. 2. Communicate to employers the talents and skill sets of our graduates. And 3. Draw students to Purdue educational programs because of well-constructed offerings. The Data Driven Agriculture minor, originally formulated, was not as accessible to majors across the campus as we now realize it should be. Also, there was overlap (dovetailing) with the Certificate in Applications of Data Science, but the alignment was not clear. This, in combination with new courses and new knowledge of courses brings us to this revision which maintains the content and structure of the minor but with broader access, clearer communication, and easier maintenance.

Expected Impact to other Programs:

We expect this revision and associated promotion (via website, etc.) might increase awareness in the Certificate in Applications of Data Science and therefore increase enrollment in that from College of Agriculture students. We are simultaneously routing this through the Integrated Data Science Initiative (IDSI) Curriculum committee so that affected units are made aware of the proposed changes.

The changes are noted below with changes tracked directly on the current catalog information.

Requirements for the Minor (21 credits)

Required Courses (12)

- [AGR 33300 - Data Science For Agriculture](#)
- Selection from Certificate in Applications in Data Science category of “Foundation in Computation” (3 credits)
-

[Selection from Certificate in Applications of Data Science category of “Foundation in Data Literacy, Management, and Analytics” \(3 credits\)](#)

- Selection from [Certificate in Applications of Data Science category of “Foundation in Statistical Methods” \(3 credits\)](#)

Data Acquisition - Choose One: (3 credits)

- [ABE 31400 - Design Of Electronic Systems](#)
- [ABE 46000 - Sensors And Process Control](#)
- [ABE 53100 - Instrumentation And Data Acquisition](#)
- [AGRY 54500 - Remote Sensing Of Land Resources](#)
- [ASM 42000 - Electric Power And Controls](#)
- [ECE 57700 – Engineering Aspects of Remote Sensing](#)
- [ECET 35901 – Computer Based Data Acquisition Applications](#)
- [EDPS 53100 – Introduction to Measurement and Instrument Design](#)
- [FNR 35700 - Fundamental Remote Sensing](#)
- [ME 36500 – Measurement and Control Systems I](#)

Data Architecture and Usage - Choose One: (3 Credits)

- [ABE 20500 - Computations For Engineering Systems](#) (if not used above as a required course)
- [ABE 30100 - Numerical And Computational Modeling In Biological Engineering](#)
- [AGEC 20201 Data Analytics](#)
- [AGEC 45100 - Applied Econometrics](#)
- [ASM 54000 - Geographic Information System Application](#)
- [BCHM 42200 - Computational Genomics](#)
- [BCHM 52100 - Comparative Genomics](#)
- [CNIT 37200 – Database Programming](#)
- [CNIT 39200 – Enterprise Data Management](#)
- [FNR 35910 Spatial Ecology \(2 cr\) + FNR 35950 Spatial Ecology Lab \(1 cr\)](#)
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- [FNR 55800 - Remote Sensing Analysis And Applications](#)
- [MGMT 40300 – Database Management Systems](#)

- [MGMT 47300 – Data Mining](#)

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Data to Decisions - Choose One: (3 credits)

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- [ABE 52700 - Computer Models In Environmental And Natural Resources Engineering](#)
 - [AGEC 30500 - Agricultural Prices](#)
 - [AGEC 35200 - Quantitative Techniques For Firm Decision Making](#)
 - [AGEC 45100 - Applied Econometrics](#)
 - [AGEC 50600 - Agricultural Marketing And Price Analysis](#)
 - [AGEC 51600 - Mathematical Tools For Agricultural And Applied Economics](#)
 - [AGEC 55200 – Introduction to Mathematical Programming](#)
 - [AGRY 44400 - Weather Analysis And Forecasting](#)
 - [AGRY 48500 - Precision Crop Management](#)
 - [ANSC 31100 - Animal Breeding And Genetics](#)
 - [ASM 42200 - Advanced Machine Technology For Agricultural Crop Production](#)
 - [ASEC 58200 – Introduction to the Application of Inferential Statistics](#)
 - [ASM 53000 - Power And Machinery Management](#)
 - [BCHM 42100 - R For Molecular Biosciences](#)
 - [BCHM 52100 – Comparative Genomics](#)
 - [BTNY 53500 - Plant Disease Management](#)
 - [ENTM 22820 – Forensic Investigation](#)
 - [ENTM 30100 – Experimentation and Analysis](#)
 -
 - [FNR 35500 - Quantitative Methods For Resource Management](#)
 - [FNR 55800 - Remote Sensing Analysis And Applications](#)
 - [FS 44400 - Statistical Process Control](#) + [FS 44600 – Food Process Automation 1](#)
 - [HORT 31900 - Controlled Environment Production Of Horticultural Crops](#)
 - [HORT 53100 - Applied Plant Genomics](#)

At least 9 credits applied to the minor must come from the College of Agriculture.

Courses appearing in more than one category may only be used once toward the minor.

Note: Many courses have prerequisites and capacity limits; while these provide some constraints, there are paths for students from any major to obtain this minor.

Department of Biochemistry

Proposed Course and Curricular Changes
(College of Agriculture Undergraduate/Graduate)

A. COURSES TO BE ADDED

None

B. CURRICULAR CHANGES

Proposed Changes: Change Course requirement for the Biochemistry and Molecular Biology Graduate Certificate (BMBGC) Program. Remove requirement for BCHM 60200 Critical Thinking and Communication in Biochemistry II (2 cr) and replace with Graduate Level Electives (2 cr).

Justification/Rationale: The Biochemistry Graduate Program curricula has changed. Starting with graduate students entering the program in Fall 2021, BCHM60200 will be taken in the fall of graduate students' second year instead of the spring of their first year. First year graduate students instead take a Graduate Level Elective during the spring. With this proposed change to the BMBGC Program, undergraduates in the BMBGC program will continue to have the same curricula as 1st year Biochemistry Graduate Program students.

Expected Impact to other Programs: None. There are very small numbers of students in the BMBGC program (<3 per year) and a variety of Graduate level elective courses available both in BCHM and other departments.

Note: Revised BMBGC program is attached at the end of this document.

Biochemistry and Molecular Biology Graduate Certificate Program

Offered by the Department of Biochemistry, College of Agriculture, Purdue University, West Lafayette Campus

Proposed Date of Initiation of the Revised Certificate Program: August 2022

Graduate or post-baccalaureate: Graduate

Method of Delivery: On-campus

Proposed Revisions of CIP Code: 260202

Overview

The Department of Biochemistry wishes to encourage individuals with exceptional aptitude and promise to embark on research careers in the STEM disciplines and to create a formal process by which to recognize their accomplishments. This goal is aligned with Purdue's strategic plan and the desire of the Purdue Board of Trustees to promote undergraduate research, by creating a vehicle by which students that have participated in our research-intensive program can further their post-baccalaureate education. The Biochemistry (BCHM) Bachelor of Science degree program at Purdue University (a degree program accredited by the American Society for Biochemistry and Molecular Biology) already includes significant intensive research training experiences; however, there appears to be an untapped opportunity to provide deliberate advanced research training and credentialing. The Biochemistry and Molecular Biology Graduate Certificate (BMBGC) Program will create a challenging research-based curriculum that provides significant evidence of achievement for these students as they subsequently pursue and compete for research careers. The BMBGC program will provide our students with a competitive edge as they seek jobs in industry or coveted slots in graduate or professional programs (MD/PH.D, PhD, MD, PharmD., DVM etc.) at top institutions in the United States and abroad. In addition, the BMBGC program has an added benefit that it will provide an incentive path for high-ability students to remain at Purdue University for a PhD program.

The overall goals of the program are 1) to provide exceptional students with an opportunity to fully explore their potential for graduate or other professional schools and 2) to provide a mechanism to accelerate the path to PhD completion for Biochemistry and Molecular Biology Graduate Certificate students who matriculate to PhD programs in the Department of Biochemistry at Purdue or other departments at Purdue or other institutions. Taken together, the expectation is that the BMBGC Program will provide a competitive advantage to attract, retain, and graduate some of the most exceptional students in STEM disciplines and provide a mechanism to accelerate their completion in PhD programs. Furthermore, the program will provide a conduit for increased participation in graduate coursework and a means to promote research by nontraditional student populations.

Admission Requirements

Individuals applying to the BMBGC Program must have a cumulative GPA of 3.50 or higher, at least 8 credits of undergraduate research, and two letters of recommendation: one from their undergraduate research advisor and an additional letter from a faculty member. Students must report a GRE score. Applications will be made to the Graduate School; evaluation of applicants will be performed by the Biochemistry Graduate Admissions Committee.

Completion Requirements

Ten (10) credits are required for the BMBGC Program. All courses must be taken for a letter grade. Students must earn a minimum grade of "B" in each required course, while their cumulative GPA must remain 3.50 or higher to complete the program. No coursework may be transferred from another institution. All coursework for the certificate must be graduate-level. Students should complete the certificate program within one academic year of being admitted. Credits used in the BMBGC Program shall not be used toward an undergraduate degree or in any other graduate certificate program, although they may be applied towards a graduate program of study. Students shall be admitted to the BMBGC Program before undertaking any coursework required for the certificate.

Required courses are: BCHM 60100 (2 credits), BCHM 60501 (3 credits) and BCHM 61000 (3 credits), Graduate Level Electives (2 credits).

BCHM 60100 Critical Thinking and Communication in Biochemistry I. The objective of this course is to teach graduate students a broad array of skills necessary for success in graduate school, focusing specifically on critical thinking in biochemistry, experimental design and interpretation, and writing and speaking clearly. This course is taught from current primary literature to enable comprehension of published scientific manuscripts. Students will learn how to read and interpret scientific literature through class presentations and discussions. Additionally, students will learn to improve both oral and written communication skills through classroom presentations and written summaries. Students will also engage in scientific debates, to learn how to research both sides of an argument and to defend a position with scientific facts. There will also be opportunities to participate in workshops on figure making for publications. Fall. cr. 2.

BCHM 60501 Macromolecules. Review of the properties of amino acids and nucleotides and basic principles that govern macromolecular secondary and tertiary structure and structure-function relationships of proteins and nucleic acids. Amino acid sequence analysis, chemical modifications of proteins and nucleic acids, protein folding, active sites, protein-protein and protein-nucleic acid interactions will be discussed. Structures, chemical properties, enzymatic reactivities and macromolecular biological functions will be emphasized throughout the course. Fall. cr. 3.

BCHM 61000 Regulation of Eukaryotic Gene Expression. Provides students with a basic understanding of gene expression mechanisms with a specific focus on newly emerging topics. Spring. cr. 3.

Examples of appropriate Graduate Level Electives* :

Course Number*	Title	Credits
BCHM 52100	Comparative Genomics	3
BCHM 53600	Biological & Structural Aspects of Drug Design	3
BCHM 61200	Bioinformatic Analysis of Genome Scale Data	3
BCHM 61500	Pathways	3
BCHM 62000	Protein Mass Spectrometry and Proteomics	2
BCHM/HORT 64000	Metabolic Plant Physiology	3
BCHM 69500	Special Topics in Biochemistry	1-4
BIOL 51600	Molecular Biology of Cancer	3
BIOL 53300	Medical Microbiology	3
BIOL 53700	Immunobiology	3
BIOL 59500	Methods & Measurements in Physical Biochemistry	3
BIOL 60000	Bioenergetics	2
BIOL 60200	Cellular Neurobiology	3
BTNY 59000	Special Problems in Plant Science	1-3
GRAD 61200	Responsible Conduct in Research	1
HORT 53100	Applied Plant Genomics	2
STAT 50300	Statistical Methods Biology	3
STAT 51100	Statistical Methods	3
STAT 51200	Applied Regression Analysis	3

*Recommended Graduate Level Electives list will be reviewed and updated at least every three years by the Biochemistry Graduate Curriculum Committee.

Student Learning and Assessment Outcomes

Students completing the BMBGC Program will gain:

- Working knowledge of essential skills for independent research
- Enhanced oral and written communication skills
- Mastery of reading and interpreting scientific literature in biochemistry
- Development of critical thinking and creativity in scientific research
- An understanding of components of grant applications, identification of and justification for research questions, strategies for designing grant applications, and tips for writing accurately, clearly and convincingly
- The ability to describe the chemical structures of the building blocks of biological macromolecules, including amino acids and nucleic acids
- The ability to demonstrate knowledge of the higher order structures of proteins and nucleic acids
- The ability to locate, evaluate and utilize information in the disciplines of biochemistry and molecular biology that is required for research, data analysis, and communication
- A basic understanding of gene expression mechanisms with a specific focus on newly emerging topics

Advising

Students in the Biochemistry and Molecular Biology Graduate Certificate Program will consult with the 1st Year Biochemistry Graduate Student Faculty Advisor, including when selecting appropriate Graduate Level Elective coursework. If a student would like to take a course not on this list, the course must be approved by 1st year Biochemistry Graduate Student Faculty Advisor.

Administration

The Department of Biochemistry in the College of Agriculture at Purdue University, West Lafayette campus shall administer the Biochemistry and Molecular Biology Graduate Certificate Program. The Department shall notify the Graduate School each May of students who have completed the requirements of the program and who shall be granted a certificate during May commencement exercises. The Head of the Department of Biochemistry and the Dean of the Graduate School will sign the certificates. The Department will submit an annual report to the Graduate Council stating the number of students currently admitted to the program, information about each admitted student, and the number of certificates awarded.

**Biochemistry and Molecular Biology Graduate Certificate Program
Purdue University, West Lafayette campus**

REQUIRED APPROVALS

Signature of Department Head

Date

Signature of Academic Dean

Date

Signature of Dean of the Graduate School

Date

Signature of Executive Vice President for Academic Affairs and Provost

Date

Department of Botany and Plant Pathology

Proposed Course and Curricular Changes
(College of Agriculture Undergraduate/Graduate)

A. COURSES TO BE ADDED

Prefix and Course Numbers: BTNY 43100 (Cross List with ASEC 43100)

Long Title: Planning for International Engagement

Prefix and Course Numbers: BTNY 43110 (Cross List with ASEC 43110)

Long Title: International Engagement Methods

Prefix and Course Numbers: BTNY 43120 (Cross List with ASEC 43120)

Long Title: Evaluating International Engagement Methods

Prefix and Course Number: BTNY 53100 (Cross List with ASEC 53100)

Long Title: Global Learning for Agriculture, Food and Natural Resources

Supporting Document

BTNY 43100

- A. Short Title:** International Engagement Methods
- B. Semester(s) Offered:** Fall, Spring, Summer
- C. Schedule Type (e.g. Lecture/Lab) and Hours:** LAB 1/100/16 and LAB 1/50/16 (this course has 2 configurations)
- D. Credits:** 1.0
- E. Justification for the course:** There is no change requested other than to clarify that all three courses in this BTNY 431x0 sequence are based entirely on International cultures, work projects and evaluation and assessment reflection to plan for the subsequent courses and should be listed as CoA IU selectives as are the BTNY 43100 - Planning For International Engagement Method, BTNY 43110 International Engagement Methods and BTNY 43120 - Evaluating International Engagement Methods are all on the College list and on the University Catalog International Understanding selectives.
- F. Course Description for University Catalog): No change is being requested.**
BTNY 43100 - Planning For International Engagement Methods Credit Hours: 1.00. A team-based laboratory course for students who seek experience working with international partners to plan and conduct quality service-learning projects. Using established partner relationships, students will work with international partners to address hands-on, real-world, identified challenges to learn the principles of extension methodology and sustainable community development by integrating their discipline knowledge and technical skills from previous courses. Students will also learn the intercultural communication, market analysis, project design and planning, entrepreneurial business planning for micro-credit loans and business ventures, and cultural factors affecting community food security while they work in bi-national teams to determine how best to apply their classroom knowledge and experience to respond to partners' needs and local resource constraints.
- G. Requisites (Pre-Reqs/Co-Reqs/concurrent pre-req):** No prerequisites for BTNY 43100.
- H. Restrictions:** None.

I. Learning Outcomes

:

Course Partner/Service Outcomes

Through appropriate and effective engagement with people from other countries and cultures, we will:

- further identify partners' cultures, barriers, assets and entrepreneurial goals,
- build intercultural relationships and trust to further the partnerships,
- strengthen the partner's/community businesses through enhanced value chains, appropriate technology innovation, or engaging with non-profit organizations, and
- strengthen academic and business strategic partnerships among all stakeholders.

Course Learning Outcomes

Through this course series, students will prepare for and participate in cultural learning experiences that cause them to:

- apply theories and perspectives of the discipline through engagement methodologies to assist partners in addressing their economic and social challenges;
- demonstrate intercultural knowledge, empathy and higher-order thinking to understand both similarities and differences in values and social norms to make reasoned decisions while interacting among people with ethnic and cultural differences;
- demonstrate critical thinking and emotional intelligence in interpreting research sources and what is observed to identify and assess opportunities to respond to complex problems, and
- demonstrate the ability to communicate effectively and work constructively with people from other cultures who speak languages other than English as part of a bi-national problem-solving team to identify and assess opportunities and future projects.

J. Applicable to College of Agriculture Core

This course **will** **will not** be nominated for inclusion on College of Agriculture Core.

College of Agricultural Core	Check all that apply
1. Mathematics and Sciences	<input type="checkbox"/>
2. Written and Oral Communication	<input type="checkbox"/>
3. Humanities and Social Sciences	<input type="checkbox"/>
4. Multicultural Awareness	<input type="checkbox"/>
5. International Understanding	<input checked="" type="checkbox"/>
6. Capstone	<input type="checkbox"/>

K. Instructor Information: Mark Russell, ASEC, 765-494-8423, mrussell@purdue.edu and
Jeneen Fields, BPP, 765-496-0218, jeneenfields@purdue.edu

L. Link to curriculum log (if applicable): [Click here to enter text.](#)

Supporting Document

BTNY 43110

- A. **Short Title:** International Engagement Methods
- B. **Semester(s) Offered:** Fall, Spring, Summer
- C. **Schedule Type (e.g. Lecture/Lab) and Hours:** EX
- D. **Credits:** 1.0-3.0
- E. **Justification for the course:** There is no change requested other than to clarify that all three courses in this BTNY 431x0 sequence are based entirely on International cultures, work projects and evaluation and assessment reflection to plan for the subsequent courses and should be listed as CoA IU selectives as are the ASEC 43100 - Planning For International Engagement Method, **ASEC 43110 International Engagement Methods** and ASEC 43120 - Evaluating International Engagement Methods are all on the College list and on the University Catalog International Understanding selectives.
- F. **Course Description for University Catalog): No change is being requested.**
ASEC 43110 - International Engagement Methods Credit Hours: 1.00 to 3.00. Using established partner relationships, students will travel to and live in *destination* for 8-10 days and work with *destination* partners and students to learn the principles of extension methodology, sustainable community development, and how to most effectively work with local leaders. Students will also learn the intercultural communication, entrepreneurial business planning, and cultural factors affecting community food security status while they work bi-national teams to determine how best to apply their classroom knowledge and experience.
- G. **Requisites (Pre-Reqs/Co-Reqs/concurrent pre-req):** BTNY 43100
- H. **Restrictions:** None.

I. Learning Outcomes:

Course Partner/Service Outcomes

Through appropriate and effective engagement with people from other countries and cultures, we will:

- further identify partners' cultures, barriers, assets and entrepreneurial goals,
- build intercultural relationships and trust to further the partnerships,
- strengthen the partner's/community businesses through enhanced value chains, appropriate technology innovation, or engaging with non-profit organizations, and
- strengthen academic and business strategic partnerships among all stakeholders.

Course Learning Outcomes

Through this course series, students will prepare for and participate in cultural learning experiences that cause them to:

- apply theories and perspectives of the discipline through engagement methodologies to assist partners in addressing their economic and social challenges;
- demonstrate intercultural knowledge, empathy and higher-order thinking to understand both similarities and differences in values and social norms to make reasoned decisions while interacting among people with ethnic and cultural differences;
- demonstrate critical thinking and emotional intelligence in interpreting research sources and what is observed to identify and assess opportunities to respond to complex problems, and
- demonstrate the ability to communicate effectively and work constructively with people from other cultures who speak languages other than English as part of a bi-national problem-solving team to identify and assess opportunities and future projects.

J. Applicable to College of Agriculture Core

This course **will** **will not** be nominated for inclusion on College of Agriculture Core.

College of Agricultural Core	Check all that apply
1. Mathematics and Sciences	<input type="checkbox"/>
2. Written and Oral Communication	<input type="checkbox"/>
3. Humanities and Social Sciences	<input type="checkbox"/>
4. Multicultural Awareness	<input type="checkbox"/>
5. International Understanding	<input checked="" type="checkbox"/>
6. Capstone	<input type="checkbox"/>

K. Instructor Information: Mark Russell, ASEC, 765-494-8423, mrussell@purdue.edu and
Jeneen Fields, BPP, 765-496-0218, jeneenfields@purdue.edu

L. Link to curriculog (if applicable): [Click here to enter text.](#)

Supporting Document

BTNY 43120

- A. Short Title:** Evaluating International Engagement Methods
- B. Semester(s) Offered:** Fall, Spring, Summer
- C. Schedule Type (e.g. Lecture/Lab) and Hours:** LAB 1/100/16 and LAB 1/50/16 (this course has 2 configurations)
- D. Credits:** 1.0
- E. Justification for the course:** There is no change requested other than to clarify that all three courses in this BTNY 431x0 sequence are based entirely on International cultures, work projects and evaluation and assessment reflection to plan for the subsequent courses and should be listed as CoA IU selectives as are the ASEC 43100 - Planning For International Engagement Method, ASEC 43110 International Engagement Methods and ASEC 43120 - Evaluating International Engagement Methods are all on the College list and on the University Catalog International Understanding selectives.
- F. Course Description for University Catalog):** BTNY 43120 - Evaluating International Engagement Methods Credit Hours: 1.00. Designed for students who have just returned from the Engagement Methods for Int'l Engagement Methods course or have previous experience working with our partners. In order to 1) fully comprehend the impact of the experience and 2) foster true long-term relationships with and service to our partners, it is required to work on our projects when we return. Matt McGregor, Former Exec. Dir. of Timmy Global Health, told us that "*It's not really about the trip*". It is essential that we accomplish: 1) Closure of trip experiences with partners and contacts - thank you's and complete follow-up; 2) Reflection of Purdue student experiences and personal goals/follow-up actions; 3) Promotion of food insecurity realities and opportunities for support; and 4) Planning, recommendations, and promotion of future service learning courses.
- G. Requisites (Pre-Reqs/Co-Reqs/concurrent pre-req):** BTNY 43110 will be the pre-requisite for BTNY 43120
- H. Restrictions:** None.

I. Learning Outcomes:

Course Partner/Service Outcomes

Through appropriate and effective engagement with people from other countries and cultures, we will:

- further identify partners' cultures, barriers, assets and entrepreneurial goals,
- build intercultural relationships and trust to further the partnerships,
- strengthen the partner's/community businesses through enhanced value chains, appropriate technology innovation, or engaging with non-profit organizations, and
- strengthen academic and business strategic partnerships among all stakeholders.

Course Learning Outcomes

Through this course series, students will prepare for and participate in cultural learning experiences that cause them to:

- apply theories and perspectives of the discipline through engagement methodologies to assist partners in addressing their economic and social challenges;
- demonstrate intercultural knowledge, empathy and higher-order thinking to understand both similarities and differences in values and social norms to make reasoned decisions while interacting among people with ethnic and cultural differences;
- demonstrate critical thinking and emotional intelligence in interpreting research sources and what is observed to identify and assess opportunities to respond to complex problems, and
- demonstrate the ability to communicate effectively and work constructively with people from other cultures who speak languages other than English as part of a bi-national problem-solving team to identify and assess opportunities and future projects.

J. Applicable to College of Agriculture Core

This course **will** **will not** be nominated for inclusion on College of Agriculture Core.

College of Agricultural Core	Check all that apply
1. Mathematics and Sciences	<input type="checkbox"/>
2. Written and Oral Communication	<input type="checkbox"/>
3. Humanities and Social Sciences	<input type="checkbox"/>
4. Multicultural Awareness	<input type="checkbox"/>
5. International Understanding	<input checked="" type="checkbox"/>
6. Capstone	<input type="checkbox"/>

K. Instructor Information: Mark Russell, ASEC, 765-494-8423, mrussell@purdue.edu and
Jeneen Fields, BPP, 765-496-0218, jeneenfields@purdue.edu

L. Link to curriculog (if applicable): [Click here to enter text.](#)

Supporting Document

BTNY 53100

- A. Short Title:** Global Learning for Agriculture, Food and Natural Resources
- B. Semester(s) Offered:** Fall, Spring, Summer
- C. Schedule Type (e.g. Lecture/Lab) and Hours:** Lecture/75/2/16 and Experiential. The 3 credits are attributed to the Lecture and 0 for the experiential. 3.0 | LEC 3 3.0 | EX 0 0.0
- D. Credits:** 3.0
- E. Justification for the course:** There is no change in syllabus but rather to propose that this lecture/experiential course, which is based on international/intercultural communities, cultures, work projects be added to the CoA IU selective list. For several reasons, including limited time or money and health and safety issues, undergraduate students and their advisors are seeking IU courses to broaden their student's horizons and fulfill the IU requirements, rather than study abroad. 500-level courses are available to undergraduates and this seems to be an ideal opportunity. The target audience is future educators, communicators, industry employees, engagement volunteers and students who are developing engagement programs for other cultures. Recent destinations pre-COVID have included Haiti and Peru. These relationships allow us to offer virtual professional development and international engagement programs.
- F. Course Description for University Catalog):** Global Learning for AFNR: Sem. S, SS cr. 3; a graduate-level course in which students research, design, and evaluate communication and education methods and theoretical frameworks to apply appropriate cultural, community engagement, targeted outcomes of a population defined by the student. The central experience is an international (intercultural when dictated by COVID) professional development experience immersed in rural and urban communities and cultures. Students will learn and develop global perspectives and effective engagement strategies to address agronomic, cultural, and community engagement realities affecting agriculture, life sciences and natural resources.
- G. Requisites (Pre-Reqs/Co-Reqs/concurrent pre-req):** No prerequisites for BTNY 53100.
- H. Restrictions:** None.

I. Learning Outcomes:

through this course series, students will prepare for and participate in cultural learning experiences that cause them to:

- Have the skills to distinguish appropriate educational designs needed for different global/intercultural learning programs based on the learners' history, geography, ethnicity, religion and current societies and cultures.
- Understand and apply one's own culture to be able to identify and understand the similarities and differences values and social norms and effectively interact among people with differing cultures, beliefs and values while designing engagement programs,
- Design educational intervention/modules which demonstrate awareness of the community political and economic systems in different and is culturally appropriate and meets the needs of the community/learners,
- Construct meaning from instructional messages, including oral, written and graphic communication applying the intersectionality of Social Identity, Intercultural Sensitivity, and Critical Race theories to engagement situations:
- Elevate one's self-awareness and recognition of others such that they can emotionally adapt their thinking and being in global/intercultural engagement efforts,
- Identify best practices for educational global immersion experience related to food, fiber and natural resources

J. Applicable to College of Agriculture Core

This course **will** **will not** be nominated for inclusion on College of Agriculture Core.

College of Agricultural Core	Check all that apply
1. Mathematics and Sciences	<input type="checkbox"/>
2. Written and Oral Communication	<input type="checkbox"/>
3. Humanities and Social Sciences	<input type="checkbox"/>
4. Multicultural Awareness	<input type="checkbox"/>
5. International Understanding	<input checked="" type="checkbox"/>
6. Capstone	<input type="checkbox"/>

K. Instructor Information: Jeneen Fields, BPP, 765-496-0218, jeneenfields@purdue.edu
Mark Russell, ASEC , 765-494-8423, mrussell@purdue.edu,

L. Link to curriculog (if applicable): [Click here to enter text.](#)

Department of Food Science

Course and Curricular Changes
(College of Agriculture Undergraduate/Graduate)

A. COURSES TO BE ADDED

Prefix and Course Number: FS 58100

Long Title: Microbial Genomics And Metabolism

Supporting Document

- A. Short Title:** Microbial Genomics And Metabolism
- B. Semester(s) Offered:** Spring
- C. Schedule Type (e.g. Lecture/Lab) and Hours:** LEC/75 min per mtg/2 mtgs per week/16 weeks per term
- D. Credits:** 3.0
- E. Justification for the course:** The rapid advent of increasingly inexpensive and high-throughput DNA sequencing techniques has ushered in an era in which complete genome sequences for large numbers of microbes are known. This development, used as a reference for global methods to measure gene expression and metabolic function in biological systems like transcriptomics, proteomics, and metabolomics, has revolutionized the study of microbial physiology and ecology. Yet having genome sequence alone has not unlocked all the secrets of microbial physiology, as much genomic “dark matter” exists in which the function of many genes can only be poorly predicted – if at all. In this course we will cover the basic principles of genome organization and evolution in microbes, how (meta)genome sequences are generated and annotated, how gene functions are predicted, and how microbial behavior is studied “in the wild” using systems biology techniques. We will discuss how these genome-enabled techniques inform our understanding of microbe-microbe and microbe-host interactions. This microbiology course will appeal to those interested in genome-function relationships in individual microbial species, in interactions with hosts, as well as community microbial behavior in microbiomes.
- F. Course Description for University Catalog):** Microbial genomics and metabolism will introduce students to how genomes are assembled, how microbial functional predictions are made, and how systems biology techniques are used to query microbial function in diverse ecosystems. Students will participate in activities including classroom lecture, group discussion, reading of primary literature, hands-on computational assignments, exams, and student projects. Basic knowledge of microbiology and molecular biology is expected.
- G. Requisites (Pre-Reqs/Co-Reqs/concurrent pre-req):** none
- H. Restrictions:** Restricted to graduate students and senior level undergraduates.
- I. Learning Outcomes:** 1. Run various sequence and genome analysis programs from the command line; 2. Identify the important properties of sequencing technology and genome organization that underlie the genomics of bacteria, archaea, and microbial eukaryotes; 3. Predict gene function using bioinformatic tools and genome properties to annotate and curate microbial genomes; 4. Analyze genomes to predict metabolic pathways and compare related genomes to identify differences in microbial potential function; 5.

Present and defend genome-based predictions of organismal metabolism both orally or in scientific writing

J. Applicable to College of Agriculture Core

This course will **will not** be nominated for inclusion on College of Agriculture Core.

K. Instructor Information: Steve Lindemann, Department of Food Science
lindemann@purdue.edu, (765) 494-9207

L. Link to Curriculog (if applicable): [Click here to enter text.](#)

Impact to other CoA programs: FS 58100 was developed in consultation with CoA microbiome core faculty and in consideration of existing courses to fill a need within the CoA microbiome curriculum. FS 58100 is expected to have no impact on other programs in CoA.

Department of Forestry & Natural Resources

Proposed Course and Curricular Changes
(College of Agriculture Undergraduate/Graduate)

A. COURSES TO BE ADDED

Prefix and Course Number: FNR 57000

Long Title: Amphibian Ecology and Conservation

B. CURRICULAR CHANGES

1) Digital Natural Resources Minor

Proposed Changes: Addition of a 15-credit Digital Natural Resources minor to be administered by FNR.

Justification/Rationale: New technology is rapidly revolutionizing the methods used in the allied disciplines of natural resources. Conventional methods that are expensive, slow, and labor intensive are being replaced by increasingly quick, cheap, and automated techniques to measure and manage natural resources. Natural resources managers are increasingly being called upon to use technology and methods that are not well-represented in existing natural resources curricula (e.g., UAS operation).

We propose a Digital Natural Resources Minor that will train students in a wide-array of cutting-edge methods that leverage emerging technologies to sustainably manage our natural resources. Courses for this minor heavily emphasize new approaches to data acquisition of natural resources, through either UAS-, aerial-, or satellite-based platforms, and novel applications in natural resources, differentiating this proposed minor from similar existing data science programs offered at Purdue. Natural systems impose unique constraints and challenges on data acquisition and applications, so course selectives will focus on forests and natural systems.

Existing data science programs at Purdue are not feasible for many students in natural resources due to the large number of additional credit hours required. For example, most students in FNR would need to add a minimum of 12-15 credit hours to their eight-semester plan to complete the Data Driven Agriculture minor; this is not tenable for many students due to the low number of free electives within any of FNR's majors. The proposed 15-credit Digital Natural Resources minor reduces that requirement by pairing existing FNR courses that correspond to the data pipeline

(Acquisition, Analysis, Ethics, and Application) with new courses, many outside CoA, that add breadth in these content areas.



Goals for the minor include:

1. Prepare students to employ a wide-array of cutting-edge methods that leverage emerging technologies to sustainably manage natural resources.
2. Expose students to advanced skills not already represented within existing FNR curricula.
3. Increase the student's understanding of the unique constraints and challenges that natural systems place on data acquisition and applications.

This minor directly addresses the 2021-2026 CoA Strategic Plan:

We address global challenges in food, life and natural resources by research and problem-solving with modern and novel science and technology.

- *Teaching: Develop cutting-edge curricula*
- *Engagement: Create innovative, multidisciplinary educational programming*
- *Research: Drive discovery: Enable data science and digital technologies*

Learning Outcomes: Students who complete the Digital Natural Resources Minor will be able to: 1) demonstrate capacity to use advanced methods (UAVs, sensor networks, etc.) to acquire data in natural systems; and 2) demonstrate capacity to ethically analyze, manage, and apply data derived from advanced measurement methods to the sustainable management of natural systems. Achievement of these learning outcomes will be assessed by:

Learning Outcome 1: Completion of 6 semester credits of courses related to data acquisition using cutting-edge methods.

Learning Outcome 2: Completion of 3 semester credits each of courses in Data Analysis, Data Ethics, and Data Applications.

Coursework: To earn the Digital Natural Resources Minor, students must complete a total of 15 credit hours of approved courses, no more than 6 credits can be counted towards the student's major or another degree requirements for FNR majors. Courses not included on selective lists may be acceptable if they meet the goal of exposing students to skills that achieve the learning outcomes of this minor.

Data Acquisition (6 credits):

AT 10901 Introduction to Unmanned Aerial System Operations	3
AT 30901 Introduction to UAS Sensor Technology	3
FNR 35700 Fundamental Remote Sensing	3
AGRY 54500 Remote Sensing of Land Resources	3

Data Analysis (3 credits):

FNR 21000 Natural Resources Information Systems	3
ILS 29500 Introduction to GIS	3

Data Ethics (3 credits):

ILS 23000 Data Science and Society: Ethical Legal Social Issues	3
PHIL 20800 Ethics of Data Science	3

Data Applications (3 credits):

FNR 35910 Spatial Ecology and GIS (Lecture)	2
FNR 35950 Spatial Ecology and GIS (Lab)	1
FNR 40100 Limnology	3
FNR 49800 Environmental Sensors and Data	1
FNR 55800 Remote Sensing Analysis and Applications	3
ASM 54000 GIS Application	3

Notes:

1. Departmental permission is not required to enroll in this minor.
2. For students in FNR majors, courses required in the student's major cannot be used to meet more than 6 credits of selectives for this minor.
3. Other courses taught under a temporary course number can be used for individual selective lists with FNR prior approval.
4. ILS 29500 and FNR 49800 are currently being taught under temporary course numbers, but are in various stages of transitioning to permanent course numbers. Selective lists will be updated in the future to reflect those permanent course numbers.

Expected Impact to other Programs: We expect enrollments to be small initially, likely 5-10 students per academic year. We believe that most students will take FNR courses within the selective lists as those will double count for major requirements of FNR majors. We have contacted instructors and department heads for those courses that are outside FNR, but expected to receive more students (e.g., AT 30901, ILS 23000, PHIL 20800); they were supportive of this minor (see supporting documents).

Contributors: Brady Hardiman, Songlin Fei, Jacob Hosen and Mike Saunders

Supporting Document

- A. **Short Title:** Amphibian Eco & Conserv
- B. **Semester(s) Offered:** Spring in even years
- C. **Schedule Type and Hours:** LEC/50/2/16, Lab/170/1/16
- D. **Credits:** 3.0
- E. **Justification for the course:** Amphibians are a diverse group of vertebrates that are distributed globally except in polar regions. Each year 100s of new species are discovered adding to the growing list of over 8,400 species. This staggering diversity comes with an amazing array of adaptations for life in different ecosystems. Unfortunately, this group also experiences severe threats from natural and anthropogenic factors that have greatly reduced their populations sizes. This course is designed to provide upper-level undergraduates and graduate students with an immersive experience into the ecology of amphibians along with the conservation and management practices that will be necessary to preserve this critically important group. The course will also prepare students for ecological research with amphibians.
- F. **Expected Impact to other Programs:** I do not anticipate any impacts to other programs resulting from adding this course.
- G. **Course Description for University Catalog:** This course will address the ecology and conservation of amphibians at the global scale. Lectures will cover diversity and natural history, phylogenetic relationships, basic biology and ecology, and conservation concerns and strategies. Materials presented in the class will come from the text and the primary literature. Labs will focus on learning important characteristics of species, families and orders of amphibians. The labs will include North American and non-North American species. Students will use dichotomous keys to identify North American species. Students also will have opportunities to discuss and debate conservation issues related to amphibians during the last half of the semester. The course will include guest lectures from experts in amphibian ecology and potential field trips or a class project.
- H. **Requisites (Pre-Reqs/Co-Reqs/concurrent pre-req):** FNR 24150, FNR 24250, BIOL 28600
- I. **Restrictions:** None
- J. **Learning Outcomes:** By the end of this course, students will be able to: 1) Identify and describe the diversity and natural history of amphibians at the global scale, 2) Describe and explain fundamental concepts and theories in amphibian biology, 3) Explain and apply approaches and tools used in amphibian conservation and management in order to address anthropogenic threats to their populations, and 4) Evaluate primary literature in

order to analyze the merits and weaknesses of current research in amphibian ecology, conservation, and management

K. If Applicable to College of Agriculture Core

This course will **will not** be nominated for inclusion on College of Agriculture Core.

L. Instructor Information: Jason Hoverman, Ph.D., Professor, Dept. of Forestry & Natural Resources; Office: FORS 213, Email: jhoverm@purdue.edu

M. Link to curriculog (if applicable): [Click here to enter text.](#)

CoA Curriculum and Student Relations Committee Approved Curricular Changes

Part I. Update to Core Curriculum Lists

The Curriculum and Student Relations Committee has approved the following addition to the core curriculum lists.

Multicultural Awareness

ANTH 37900 – Native American Cultures

Part II. Update to Core Curriculum Lists (For Information Only)

The Agricultural Faculty authorized the Curriculum and Student Relations Committee to adjust the lists of courses that may fulfill core curriculum requirements in undergraduate plans of study and to report changes to the total faculty. The Curriculum and Student Relations Committee has approved the following additions to the core curriculum lists.

International Understanding

BTNY 43100 – Planning for International Engagement

BTNY 43110 – International Engagement Methods

BTNY 43120 – Evaluating International Engagement Methods

HIST 31905 – Christianity in the Global Age

HIST 33700 – Europe since 1945: Cold War, Fractious Unity

Part III. Advanced Placement (AP) Credit in Purdue's College of Agriculture

[Advanced Placement \(AP\) Credit in Purdue's College of Agriculture](#)

The College Board Advanced Placement (AP) Program allows you to establish college credit from tests taken at the completion of high school AP courses. See [Purdue credit for AP Tests](#) for a complete list of AP credit Purdue accepts and the scores necessary to earn credit.

AP test scores of **4 or 5** are often needed to earn credit for **specific Purdue courses**, whereas an AP exam score of **3** often results in **undistributed credit**, meaning Purdue does not have an equivalent course. Undistributed credit appears as the number 1XXXX or 2XXXX following the course subject.

For applicability of AP credits earned with a 3 on the AP test (which result in undistributed credit) to Purdue Agriculture plans of study, please refer to the table below.

See Other Information below the table for more information.

Example:

AP credits earned as **Art History** which are listed on a Purdue transcript as **AD 1XXXX** may be used for **Humanities/Social Science Selective** credit, *unless there are earned Purdue credits in AD 22600 or AD 22700* (in which case, the AD 1XXXX credits are redundant and cannot be used toward graduation requirements).

AP Credits earned as ...	Which show up on a Purdue transcript as ...	*May be used in Agriculture plans of study the same as ...	Unless there are earned Purdue credits in ...
<p>*Undistributed credit (1XXXX or 2XXXX) earned from an AP exam cannot be used to meet University Core Curriculum (UCC) requirements. However, this undistributed credit may be used to meet College of Agriculture requirements (as noted below).</p>			
Art History	AD 1XXXX	Humanities/Social Science Selective	AD 22600 or AD 22700
Biology	BIOL 1XXXX	Free Elective Only	BIOL 11000 or BIOL 12100 & 13500
English Language and Composition	ENGL 1XXXX	Written Communication Selective Only scores of 4 or 5 on this AP test count for UCC – Written Communication (WR)	ENGL 10600 or ENGL 10800 or HONR 19903
English Literature and Composition	ENGL 1XXXX	Humanities/Social Science Selective	ENGL 23100
Environmental Science	EAPS 1XXXX	Free Elective Only	EAPS 12500
European History	HIST 1XXXX	Humanities/Social Science Selective and International Understanding Selective	HIST 10400

Government & Politics: Comparative	POL 1XXXX	Humanities/Social Science Selective and International Understanding Selective	POL 14100
Government & Politics: United States	POL 1XXXX	Humanities/Social Science Selective	POL 10100
Human Geography	EAPS 1XXXX	Free Elective Only	EAPS 12000
Macroeconomics (See Other Information below)	ECON 2XXXX	Humanities/Social Science Selective	AGEC 21700 or ECON 21000 or ECON 25200
Microeconomics (See Other Information below)	ECON 2XXXX	Humanities/Social Science Selective	AGEC 20300 or ECON 21000 or ECON 25100
Music Theory	MUS 1XXXX	Humanities/Social Science Selective	MUS 36100
Physics I (See Other Information below)	PHYS 1XXXX	Additional Math/Science Selective	PHYS 22000
Physics II (See Other Information below)	PHYS 1XXXX	Additional Math/Science Selective	PHYS 22100
Physics B (See Other Information below)	PHYS 1XXXX	Additional Math/Science Selective	PHYS 22000 & 22100

Physics C - Electricity & Magnetism (See Other Information below)	PHYS 1XXXX	Additional Math/Science Selective	PHYS 27200
Physics C - Mechanics (See Other Information below)	PHYS 1XXXX	Additional Math/Science Selective	PHYS 17200
Psychology	PSY 1XXXX	Humanities/Social Science Selective	PSY 12000
Spanish Literature	SPAN 1XXXX	Humanities/Social Science Selective and International Understanding Selective	SPAN 24100
Statistics	STAT 1XXXX	Free Elective Only	STAT 30100 or STAT 35000 or STAT 50100
Studio Art: 2- D Design	AD 1XXXX	Humanities/Social Science Selective	AD 10202
Studio Art: 3- D Design	AD 1XXXX	Humanities/Social Science Selective	AD 10600
Studio Art: Drawing	AD 1XXXX	Humanities/Social Science Selective	AD 11300
United States History	HIST 1XXXX	Humanities/Social Science Selective	HIST 15100 or HIST 15200

World History	HIST 1XXXX	Humanities/Social Science Selective and International Understanding Selective	HIST 10500
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Other Information:

- AP score of 3 or better on both **Macroeconomics and Microeconomics** gives credit for ECON 210: Principles of Economics. AP score of 3 on one and 4 or 5 on the other gives credit for ECON 21000 and credit for the appropriate ECON course (ECON 25100: Macroeconomics or ECON 25200: Microeconomics).
- AP score of 5 on any **Physics** exams is required to earn credit for any specific Purdue Physics courses. AP Physics scores of 3 or 4 result in undistributed (PHYS 1XXXX) credit.
- Calculus AB, BC, or BC - AB (subscore) with an AP score of 3 earns credit for Purdue's MA 15555: Quantitative Reasoning. This credit fulfills **UCC – Quantitative Reasoning (QR)** for the [University Core](#). However, **MA 15555 cannot be used to meet any College of Agriculture degree requirements.**

Part IV. Expiration of a course (For Information Only)

The Agricultural Faculty authorized the Curriculum and Student Relations Committee to approve expiration of courses and to report these to the total faculty. The Curriculum and Student Relations Committee has approved expiration of the following courses:

ANSC 37200 - Horse Evaluation

Justification: Course is no longer taught.

Expected Impact to other Programs: None

ANSC 47200 - Horse Judging

Justification: Course is no longer taught.

Expected Impact to other Programs: None

Part V. Modifications of a course (For Information Only)

ANSC 22100 - Principles of Animal Nutrition

Proposed Change: Add CHM 12901 as a pre-requisite (CHM 10100, 10500, 11100, 11500, 12100, 12300, 12500, 13500 are currently listed)

Justification: An increased number of ANSC students are taking CHM 12901 as their chemistry course and many students outside of Animal Sciences are taking CHM 12901 as their chemistry course (i.e., BIOL). Because 22100 is a widely taken course, this change will help alleviate workflow overrides in ANSC as well as other Departments. Currently, ANSC advisors have to look up each student individually and review their transcripts to determine eligibility.

Expected Impact to other Programs: This change should allow other majors that take CHM 12901 as their chemistry course (BIOL, BCHM) more ease of registration and will help alleviate workflow overrides.

ANSC 38100 - Leadership for a Diverse Workplace

Proposed Change: Change list of multicultural class pre-requisites; change to course restrictions

Justification: The old list of college approved diversity courses are listed as pre-requisites. An update is needed to have the list of pre-requisites match the current list of college approved multicultural courses. Current list of majors in restrictions section are ANSC concentrations. An update is needed to list “Animal Sciences” as the major rather than concentrations.

Expected Impact to other Programs: None

ASEC 43100 - Planning For International Engagement Methods

Proposed Change: Cross-list with BTNY 43100

Justification: Cross-listing allows for flexibility in student plans of study.

Expected Impact to other Programs: This may open the courses to more students in BTNY and Plant Sciences.

Approved 11/09/2021

ASEC 43110 - International Engagement Methods

Proposed Change: Cross-list with BTNY 43110

Justification: Cross-listing allows for flexibility in student plans of study.

Expected Impact to other Programs: This may open the courses to more students in BTNY and Plant Sciences.

ASEC 43120 - Evaluating International Engagement Methods

Proposed Change: Cross-list with BTNY 43120

Justification: Cross-listing allows for flexibility in student plans of study.

Expected Impact to other Programs: This may open the courses to more students in BTNY and Plant Sciences.

ASEC 53100 - Global Learning for Agriculture, Food and Natural Resources

Proposed Change: Cross-list with BTNY 53100

Justification: Cross-listing allows for flexibility in student plans of study.

Expected Impact to other Programs: This may open the courses to more students in BTNY and Plant Sciences.

ASEC 59500 - Internship in Agricultural and Extension Education

Proposed Change: Change title to Internship in Agricultural Sciences Education and Communication

Justification: The current course title is “Internship in Agricultural and Extension Education,” which indicates the internships are only for students who engage in some kind of teaching or educational capacity. This title change provides flexibility for ASEC instructors to provide internship credit to students across the Department’s various areas.

Expected Impact to other Programs: This is a title change to an existing course to better reflect the breadth of ASEC majors. It is not expected to impact other departments or majors.

BTNY 11000 - Introduction to Plant Sciences

Proposed Change: Add Restriction – Exclude Plant Science (PLSC) major

Justification: PLSC majors are required to take BTNY 12000 – Principles of Plant Biology I and BTNY 121 – Principles of Plant Biology II, which is a two-part series and required on the PLSC major study plan

Expected Impact to other Programs: BTNY 12000 and 12100 are required for plant science major.

BTNY 30100 - Introduction to Plant Pathology

Proposed Change: Add prerequisite of BIOL 11000 or BIOL 11100 in addition to the current prerequisites of Undergraduate level BTNY 11000 Minimum Grade of D- or Undergraduate level BTNY 12100 Minimum Grade of D- or Undergraduate level BTNY 12000 Minimum Grade of D- Prerequisites would then be one of the following, with a minimum grade of D-:

BTNY 11000 or BIOL 11000 or BTNY 12100 or BIOL 11100 or BTNY 12000

Justification: Offers a larger group of students to take the course to increase plant knowledge in the critical area of pathology *study plan*

Expected Impact to other Programs: Will provide addition options for other majors

LA 22700 - Planting Design I

Proposed Change: Title Change: Planting I: Creating Ecologically Connected Landscapes

Justification: The revised title provides more insight onto course content and aligns this course content with that of its subsequent allied course in the topic.

Expected Impact to other Programs: none

LA 32500 - Planting Design II

Proposed Change: Title Change: Planting II: Ecological Landscape Performance

Description Change:

FROM: Credit Hours: 3.00. Study of plants as unique elements of landscape design. Plants will be studied for their aesthetic and functional uses in the landscape. Various scales of planting and design will be approached. Natural distribution and ecological considerations in planting design will be explored. Requires class trips. Students will pay individual lodging or meal expenses when necessary. Typically offered Fall.

TO: Study of plants and their integration with other site features (e.g., water, landform) to increase sustainability. Plants will not only be studied for their aesthetic and spatial uses in the landscape, but also their ecological functions and temporal dynamics. The relationship of plants to site planning, ecosystems, and human use will be explored. Various scales, sustainable practices, and

landscape performance will be considered. Class trip may be required. Students will pay individual lodging or meal expenses when necessary. Typically offered Fall.

Justification: A new faculty member has re-focused this existing course to better address contemporary issues and needs in landscape architecture practice. The revised course description better reflects these issues.

Expected Impact to other Programs: none

College of Agriculture 2022 May Graduation Candidate Roster As of March 10, 2022

Subject to the approval of the Agricultural Faculty, the following graduation candidates who complete degree requirements during the current semester will be recommended to the Board of Trustees to receive their degrees as of May 13, 2022, and the candidates who complete degree requirements during the Summer Session will be recommended for degrees as of August 6, 2022. Also, the Dean of Agriculture, or his designee shall be authorized to act for the faculty regarding the certification of qualified candidates.

College	Name	Degree	Major	Conc 1	Minor 1	Minor 2	Minor 3
A	Achulli, Frank A.	BS	FDSC		FERM		
A	Adams, Margaret A.	BS	FDSC		FERM		
A	Alsdorf, Jackson W.	BS	SUAS	AMGT	WDSC		
A	Alva, Makayla L.	BS	NREV	ENPE	ENPP	LAWS	
A	Anderson, Lisa L.	BS	NREV	ENPE	LAWS		
A	Anderson, Michael C.	BS	ASCI	BISC	BIOS		
A	Arambula, Alexis A.	BS	ASCI	ANAG			
A	Armand, William A.	BS	ASM		CRPS	FDAG	
A	Ashby, Rebecca P.	BS	WLDL				
A	Bailey, Brooke N.	BS	ASCI	PRMD	BIOS	FDAG	
A	Baker, Haley M.	BS	AGBS	AGMR	FARM		
A	Baker, Haley M.	BS	AGCM				
A	Ballard, Nathaniel A.	BS	IBIO				
A	Balser, Davis W.	BS	WLDL		FOEC		
A	Baney, Claire L.	BS	AGCM				
A	Baney, Claire L.	BS	AGEC	APAE			
A	Bao, Michelle M.	BS	ASCI	PRMD	SPNS	BIOS	
A	Barrett, Laura O.	BS	AGEC	APAE	GFAS	FDAG	
A	Barrett, Laura O.	BS	AGCM				
A	Barry, Franklin S.	BS	FDSC		FERM		
A	Beard, Elijah A.	BS	FARM		SOIL		
A	Beard, Grace N.	BS	SUAS	AMGT			
A	Beard, Ryan R.	BS	IBIO				
A	Beier, Clare C.	BS	AQSC	MAFB			
A	Bender, David A.	BS	AGBS	AGMG	FARM		
A	Bennett, Gannon T.	BS	BCHM				
A	Berkemeier, Geraldine E.	BS	BCHM				
A	Blackwell, Samantha J.	BS	WLDL				
A	Bluhm, Eleya C.	BS	ASCI	PROD			
A	Blum, Hannah R.	BS	BCHM	PRMD			
A	Bolte, Zachary M.	BS	AQSC	FISH			
A	Brantley, Summer R.	BS	IBIO	FRSE	FRSC		
A	Brazeau, Ashley N.	BS	IBIO	FRSE	FRSC	SPNS	PSY
A	Brewer, Audra C.	BS	FDSC		FERM		
A	Bricker, Samuel P.	BS	ASM				
A	Brinker, Hannah P.	BS	PLSC		ARTS		

College	Name	Degree	Major	Conc 1	Minor 1	Minor 2	Minor 3
A	Brunton, Mercedes E.	BS	ASCI	PROD	CRPS		
A	Bullerman, Lindsey M.	BS	FDSC		FNN		
A	Bundy, Ethan M.	BS	ASCI	PROD			
A	Burns, Daniel J.	BS	AQSC	MAFB	BIOS		
A	Burns, Emily L.	BS	SUAS	AMGT			
A	Burns, Emily L.	BS	NREV	WQTY			
A	Cambra, Alyssa F.	BS	AGBS	AGMG	COMU	FARM	
A	Cantor, Noah B.	BS	ASCI	PRMD	HIST		
A	Carr, David P.	BS	HOSC	LACM			
A	Carroll, Molly C.	BS	FDSC		POL	ECON	
A	Carter, Reagan G.	BS	AGBS	AGFN	CRPS		
A	Casana, Lillian S.	BS	ASCI	PRMD	BIOS		
A	Cecil, Mekenzie R.	BS	ASCI	PROD			
A	Celentano, Abigail J.	BS	NREV	WQTY	ENPP		
A	Charpentier, Grace N.	BS	BCHM	PMED			
A	Chen, Yihao	BS	PGBB				
A	Churchill, Morgan E.	BS	AGBS	CMRK	FARM	CRPS	
A	Clark, Amy G.	BS	ASCI	PRMD	WLFS	BIOS	
A	Clark, David M.	BS	ASM				
A	Clifford, Colton C.	BS	ASM		FDAG		
A	Coakley, Cheyanne M.	BS	BCHM				
A	Colbert, Kyle D.	BS	AGBS	AGMG	MGMT	HIST	
A	Colegrove, Brady A.	BS	AGBS	AGMG	FARM		
A	Conley, Sierra M.	BS	NREV	WQTY	AQSC	WLFS	
A	Conrad, Austin A.	BS	AGEC	APAE	FARM		
A	Conrad, Austin A.	BS	ASM	DAIS			
A	Convey, Jason M.	BS	AGBS	AGFN	SUEV		
A	Cook, Kelden T.	BS	FDSC		FERM		
A	Coon, Owen D.	BS	AGEC	APAE	FARM	FDAG	
A	Cooper, Colton L.	BS	AGBS	AGMR	ANSC		
A	Corban, Austin A.	BS	AGBS	AGMG			
A	Corns, Morgan N.	BS	AGBS	AGFN	CRPS	FARM	
A	Courtney, Lauren E.	BS	BCHM		HORT		
A	Cox, Caitlin A.	BS	ASCI	PROD			
A	Crockett, Jacobson P.	BS	BCHM				
A	Cullum, Addie E.	BS	ASCI	PRMD	SPNS		
A	Dagley, Brandon S.	BS	AGBS	AGMG	TSCM		
A	Dai, Dai	BS	SFS		ARTS	CRPS	PLBI
A	D'Amico, Kelsey L.	BS	ASCI	PRMD			
A	Davis, Dalton N.	BS	AGEC	APAE			
A	Davis, Haley J.	BS	ASCI	PRMD			
A	De Acetis, Elizabeth A.	BS	FDSC		FERM	FNN	
A	Deason, Samuel R.	BS	AGBS	CMRK			
A	DeBoer, Devin R.	BS	SUAS	AMGT	FDAG		
A	Decker, Allison R.	BS	AGBS	AGMG	HIST		
A	Delp, Margaret E.	BS	INAG		WLFS		
A	Deng, Tianchun	BS	ASM				
A	Deno, Hannah L.	BS	AGCM				
A	Dines, Morgan S.	BS	ASCI	BEHV	SOC		
A	Dirksen, Audrey M.	BS	FDSC		FNN		
A	Donahue, Sarah N.	BS	PLSC		EAPS		

College	Name	Degree	Major	Conc 1	Minor 1	Minor 2	Minor 3
A	Donlon, Angel M.	BS	ASCI	BEHV	WLFS		
A	Donnelly, Anna G.	BS	BCHM	PMED			
A	Donohue, Samuel J.	BS	HOSC	HPMK	FRSC	FDAG	
A	Downey, Olivia L.	BS	SFS		HORT	ENPP	
A	Duke, Russell J.	BS	WLDL				
A	Dunagin, Mitchell R.	BS	AGBS	AGFN	GFAS		
A	Dyson, Wyatt M.	BS	SHSC				
A	Edmondson, Caroline A.	BS	AGBS	AGMG			
A	Edmondson, Caroline A.	BS	FDSC				
A	Eggert, Garrett M.	BS	AGBS	AGMG	HORT	FARM	
A	Elliott, Maya C.	BS	AGBS	AGMG	SPNS		
A	Ellis, Christopher M.	BS	INAG		ASM		
A	Elswick, Maranda R.	BS	AGCM				
A	Emerick, Eric S.	BS	ASM				
A	Erwin, Tristan M.	BS	SUAS	AMGT			
A	Estelle, Rosetta K.	BS	NREV	LDRS			
A	Evangelista Pou, Cristina	BS	FDSC		FERM	FDAG	
A	Evans, Brooke K.	BS	AGBS	AGMG	HRMM		
A	Evers, Emily L.	BS	AGBS	AGMG	OLSV	FARM	
A	Ezenwa, Ogechukwu B.	BS	BCHM				
A	Fawley, Jacob R.	BS	BCHM		AQSC		
A	Fernandez, Rachel A.	BS	ASCI	BEHV			
A	Fischer, Jarrett D.	BS	SUAS	AMGT			
A	Fischer, Jarrett D.	BS	FARM		CRPS		
A	Fittz, Logan M.	BS	AGBS	AGMG	TFMG		
A	Fogg, William A.	BS	ASM				
A	Fry, Ryan M.	BS	WLDL				
A	Fuelling, Emily M.	BS	AGBS	AGMG			
A	Fuelling, Kendra L.	BS	AGED		ANTR		
A	Garner, Riley A.	BS	SUAS	ABMK	FARM	FDAG	
A	Garrett, Katelyn R.	BS	WLDL		IBIO		
A	Geller, Matthew D.	BS	SLMK		HORT		
A	Gemlick, Emma E.	BS	WLDL				
A	George, Grace M.	BS	ASCI	BISC			
A	Gillis, Caleb D.	BS	SUAS	AMGT	FARM		
A	Glassburn, Garrett	BS	ASM				
A	Gleason, Joseph M.	BS	FDSC		FERM		
A	Glosser, Garrett M.	BS	SLMK				
A	Gonzalez, Andrea S.	BS	ASCI	PRMD	BIOS		
A	Goode, Cody S.	BS	BCHM		HIST		
A	Gordon, Abby L.	BS	NREV	WQTY	ARTS		
A	Gorman, Sara R.	BS	ASCI	PROD	WLFS		
A	Gosheff, Alaina C.	BS	SUAS	IAGR			
A	Goss, Taylor N.	BS	SLMK		CRPS		
A	Gouveia, Kyrstin M.	BS	ASCI	PRMD	BIOS		
A	Green, Trent W.	BS	ASM				
A	Green, Trent W.	BS	AGBS	AGMG			
A	Greer, Autumn L.	BS	IBIO	FRSE			
A	Greer, Autumn L.	BS	PGBB				
A	Griffith, Megan A.	BS	ASCI	PROD	FDAG		
A	Griffith, Nathan A.	BS	ASCI	PROD			

College	Name	Degree	Major	Conc 1	Minor 1	Minor 2	Minor 3
A	Grotjan, Molly E.	BS	AGBS	AGMG	TSCM	GFAS	
A	Grynheim, Nira N.	BS	ASCI	BEHV	PSY	CDSS	
A	Haake, Aliya N.	BS	NREV	ENPE			
A	Habegger, Jacob E.	BS	HOSC	LAEM			
A	Hackney, Seth A.	BS	SUAS	IAGR	GFAS		
A	Hamilton, Alanna M.	BS	BCHM	PRMD			
A	Hamilton, Spencer A.	BS	HOSC	HPMK			
A	Hammond, Brady C.	BS	AGBS	AGMG	FARM		
A	Hanno, Samantha L.	BS	ASCI	PRMD	ANTR		
A	Hardy, Bonnie M.	BS	HOSC	HPMK			
A	Harper, Madeline M.	BS	FDSC		PSY		
A	Harris, Grace I.	BS	AGBS	AGMG			
A	Harris, Keely E.	BS	ASCI	PRMD			
A	Hartanto, Christabel J.	BS	FDSC				
A	Hasler, Grace A.	BS	AGCM				
A	Hasler, Grace A.	BS	SLMK				
A	Hasler, Madilyn R.	BS	TMGT				
A	Hathaway, William S.	BS	TMGT				
A	Hedrick, Hailey M.	BS	ASCI	BISC			
A	Heller, Ryan S.	BS	NREV	EMEC	EEE		
A	Hemme, Colin A.	BS	BCHM				
A	Henderson, Lane M.	BS	AGBS	AGMG			
A	Hensley, Madelynn E.	BS	PGBB		PLBI		
A	Herr, Austin V.	BS	ASM				
A	Hicks, Clayton T.	BS	BCHM	PMED	HIST		
A	Hines, Payton E.	BS	SLMK				
A	Hinton, Sage C.	BS	WLDL				
A	Hitze, Lydia M.	BS	ASCI	BEHV			
A	Hitzemann, Bayley K.	BS	ASCI	PRMD			
A	Hobbs, Richard C.	BS	NREV	WQTY			
A	Holt, David M.	BS	NREV	ENPE			
A	Hoover, Mitchell T.	BS	ASCI	BEHV			
A	Hopfer, Brooke K.	BS	ASCI	PROD			
A	Hopkins, David B.	BS	AGBS	AGMG			
A	House, Cooper H.	BS	AGBS	AGMG	CRPS	FARM	GFAS
A	Huang, Jiahui	BS	AGEC	APAE	CS		
A	Hubbard, Mikayla G.	BS	BCHM	PMED	SPRO		
A	Hubble, Olivia K.	BS	NREV	WQTY	ENPP		
A	Huddleston, Makenna L.	BS	WLDL				
A	Hunter, Allison J.	BS	ASCI	ANAG			
A	Hurst, Aaron M.	BS	ASCI	ANAG			
A	Johnson, Emily T.	BS	BCHM				
A	Johnson, Grace E.	BS	NREV	ENPE	ENPP	PLBI	
A	Johnson, Justin R.	BS	FARM		CRPS		
A	Johnson, Justin R.	BS	ASM				
A	Johnson, Larissa A.	BS	AGBS	AGMG	CRPS		
A	Johnston, Lydia R.	BS	AGBS	AGMG			
A	Jokovich, Reagan M.	BS	ASCI	PRMD			
A	Jones, Sarah J.	BS	SUAS	AMGT			
A	Jordan, Jessica A.	BS	AGCM				
A	Jung, Ku'ulei F.	BS	ASCI	BISC			

College	Name	Degree	Major	Conc 1	Minor 1	Minor 2	Minor 3
A	Just, Nicholas W.	BS	SUAS	AMGT			
A	Kargol, Jason S.	BS	ASCI	PRMD			
A	Keesling, Jackson M.	BS	WLDL				
A	Kent, Ashlyn A.	BS	ASCI	PRMD			
A	Kessens, Jacob R.	BS	AGCM				
A	Khan, Rai Aun Muhammad Iqbal	BS	AGBS	AGMG	FARM		
A	Kidwell, Caleb Q.	BS	BCHM		BIOS	CHEM	
A	Kiep, Nicolas	BS	AGBS	AGMG	GFAS		
A	Kilmer, Emily A.	BS	AGED		HORT	OLSV	
A	Kinser-McBee, Kevin J.	BS	WLDL				
A	Kirby-Ramberger, Isabella M.	BS	ASCI	PROD	PSY		
A	Kiselica, Megan A.	BS	WLDL		EAPS		
A	Klaveano, Sydney K.	BS	AGBS	AGMR	POL		
A	Korniak, Benjamin J.	BS	AGEC	CMRK	CRPS	FARM	GFAS
A	Kouame, Agenor U.	BS	ASM	DAIS			
A	Krell, Morgan C.	BS	AQSC	FISH			
A	Kretzmeier, Clay M.	BS	SLMK				
A	Kronewitter, Josey M.	BS	HOSC	HPMK			
A	Kubertu, Clinton	BS	FDSC		FERM		
A	Kuhn, Olivia G.	BS	AGCM				
A	LaGro, Makayla A.	BS	ASCI	BISC			
A	Lagunas, Amacalli	BS	WLDL				
A	Lammers, Justin W.	BS	ASM		CRPS	FARM	
A	Lang, Robert	BS	AGEC	APAE	POL		
A	Lanoue, Kaleb E.	BS	ASM		FDAG		
A	Lansing, Emily C.	BS	FDSC				
A	Lash, Alexis M.	BS	ASCI	PRMD			
A	Laycock, Jada N.	BS	WLDL		FOEC		
A	Leach, Maia E.	BS	IBIO		NREV		
A	Lehe, Micah D.	BS	BCHM				
A	Lehman, Renae L.	BS	ASCI	PROD			
A	Leitz, Bradley R.	BS	TMGT				
A	Lewand, Paige N.	BS	ASCI	PRMD	WLFS	BIOS	
A	Li, Renqiuguo	BS	BCHM				
A	Liao, Yichen	BS	ASCI	BISC			
A	Linville, Benjamin J.	BS	SUAS	AMGT	FARM		
A	Lipps, Mackenzie I.	BS	WLDL				
A	Lobsiger, Brook M.	BS	ASCI	PRMD	MGMT	BIOS	
A	Luebchow, Taylor L.	BS	FDSC		FERM		
A	Luse, Phillip D.	BS	AGBS	AGMG	SCTE		
A	Lyons, Alexis M.	BS	WLDL				
A	Madden, Jacob J.	BS	AGBS	AGMG			
A	Maddox, Marissa R.	BS	ASM		FDAG		
A	Magsam, Gregory F.	BS	SUAS	AMGT			
A	Mahrenholz, Macy T.	BS	AQSC	MAFB			
A	Maneke, Erika L.	BS	AMCL		FRSC		
A	Manley, Isaac D.	BS	ASCI	PRMD	BIOS		
A	Marigliano, Lily J.	BS	AQSC	MAFB			
A	Martin, Joshua C.	BS	FDSC		CHEM		
A	Martinez, Destiny A.	BS	WLDL				
A	Martinez, Sally B.	BS	WLDL				

College	Name	Degree	Major	Conc 1	Minor 1	Minor 2	Minor 3
A	Martinez-Morales, Stephanie M.	BS	IBIO		FRSC		
A	Massie, Grace J.	BS	ASCI	BISC			
A	Mathis, Shelby L.	BS	AQSC	MAFB	ENPP		
A	Matthews, Andrew G.	BS	NREV	WQTY	EEE		
A	Matthews, Avery S.	BS	AQSC	FISH	WLFS		
A	Maxwell, Truman J.	BS	AGBS	CMRK	FARM		
A	Mccarty, Grace E.	BS	WLDL				
A	Mcdowell, Rachel C.	BS	PGBB				
A	McGovern, Alyson D.	BS	FDSC		FERM		
A	Mcgregor, Abigail E.	BS	ASM		FDAG	ANSC	
A	McKinney, Logan C.	BS	AGEC	APAE			
A	McKinney, Logan C.	BS	ASCI	ANAG			
A	Mehling, Kirsten A.	BS	AGCM				
A	Meinders, Shayla P.	BS	ASCI	PROD	SOIL		
A	Melcher, Emma C.	BS	AGBS	AGMG	FARM		
A	Meskis, Julia	BS	NREV	ENPE	LAWS		
A	Middleton, Alexis M.	BS	SUAS	IAGR	FDAG		
A	Miles, Lauren J.	BS	ASCI	PRMD	FARM		
A	Miles, Rachelle L.	BS	ASCI	PRMD			
A	Milner, Mackenzi L.	BS	ASCI	PRMD			
A	Minnick, Mallory M.	BS	ASCI	ANAG	FDAG		
A	Mize, Kaitlyn M.	BS	AGCM				
A	Mobley, Liliana G.	BS	NREV	LDRS			
A	Moffat, Melliandra F.	BS	ASCI	PRMD			
A	Montgomery, Elizabeth J.	BS	ASCI	ANAG	FDAG		
A	Morales-Rodriguez, Mariana S.	BS	ASCI	PRMD	ANTR		
A	Mosier, Kara A.	BS	ASCI	PRMD	BIOS		
A	Mueller, Erica G.	BS	NREV	ENPE	SOIL	WLFS	
A	Mulligan, Margaret K.	BS	ASCI	PRMD	BIOS		
A	Murray, Josie I.	BS	NREV	LDRS	UFOR		
A	Myers, Bryce E.	BS	FDSC				
A	Myers, Emily T.	BS	ASCI	ANAG			
A	Nara, Tanner	BS	AGBS	AGMG	ASM		
A	Nealy, Emily R.	BS	SUAS	AMGT	FARM		
A	Neher, Madison R.	BS	AQSC	MAFB			
A	Neidigh, Serae N.	BS	NREV	ENPE			
A	Nerney, Alexandra E.	BS	FDSC		FERM		
A	Neuman, Adam E.	BS	AGBS	CMRK	CRPS		
A	Nevitt, Cooper M.	BS	BCHM		GRMN		
A	Newman, Peyton A.	BS	ASCI	PROD	COMU	FDAG	
A	Ngo, Jennifer T.	BS	ASCI	PRMD			
A	Nikolai, Emma E.	BS	ASCI	PRMD			
A	Nobbe, Zoey E.	BS	AGBS	AGMR	COMU	FARM	
A	Noble, Bridget A.	BS	ASCI	BEHV	ANTR		
A	Nolan, Brianna L.	BS	ASCI	BISC			
A	Nolan, Brianna L.	BS	PGBB				
A	Nowling, Megan M.	BS	AGED				
A	Nunn, Madeleine E.	BS	ASCI	PRMD			
A	O'Brien, Scarlett M.	BS	NREV	ENPE	LAWS	HURS	
A	Oliver, Kelsey L.	BS	ASCI	PRMD			
A	Onken, Rachel A.	BS	BCHM				

College	Name	Degree	Major	Conc 1	Minor 1	Minor 2	Minor 3
A	Orth, Emily N.	BS	ASCI	PROD	FDAG		
A	Oswal, Adesh D.	BS	SUAS	AMGT			
A	Paarberg, Tara M.	BS	BCHM	PRMD			
A	Papas, Jasmine	BS	NREV	WQTY	WLFS	ENPP	
A	Patrick, Travis C.	BS	ASM				
A	Pearson, Cole R.	BS	AGBS	AGMG			
A	Pengiel, Lauren A.	BS	ASCI	BISC	WLFS		
A	Perin, Kelsey J.	BS	FDSC		FERM		
A	Peterkin, Charlotte R.	BS	ASCI	BISC			
A	Peterson, Emily E.	BS	HOSC	LADS	FDAG	TFMG	
A	Peterson, Jessica L.	BS	FARM				
A	Peterson, Jessica L.	BS	SUAS	AMGT			
A	Petrow, Summer C.	BS	ASCI	BISC			
A	Pheifer, Ella C.	BS	FDSC		SPNS		
A	Ploessl, Savanna G.	BS	IBIO		FRSC		
A	Plummer, Gary L.	BS	FARM		ASM		
A	Politan, Taylor K.	BS	ASCI	PROD	CRPS		
A	Pond, Aubree L.	BS	INAG		NREV		
A	Porsch, Brenna I.	BS	PLSC		IBIO		
A	Potter, Kathryn V.	BS	ASCI	PRMD			
A	Pounds, Kara J.	BS	ASCI	ANAG	FDAG		
A	Price, Caleb M.	BS	AGBS	AGMG			
A	Purtlebaugh, Tristan M.	BS	WLDL		SPNS		
A	Quinn, Madeline I.	BS	PGBB		BIOS		
A	Ramirez, Steve S.	BS	AGBS	AGMG			
A	Raplee, Melanie C.	BS	NREV	ENPE	WLFS		
A	Ravesloot, Abby L.	BS	ASCI	PRMD	BIOS		
A	Ray, Emily V.	BS	ASCI	PRMD	BIOS		
A	Reed, Sydney P.	BS	FDSC				
A	Reoch, Cameron T.	BS	NREV	LDRS	WLFS		
A	Retter, Jaden C.	BS	AGEC	CMRK	CRPS		
A	Rexing, Lauren O.	BS	AGEC	APAE	ENGL		
A	Riedling, Olivia	BS	BCHM		SPRO		
A	Ringwalt, Denise Yen	BS	WLDL		FAQS		
A	Robinson, Eli E.	BS	ASM				
A	Rodkey, Virgil B.	BS	AGBS	AGMG			
A	Romanyk, Madison R.	BS	ASCI	PRDT	SPNS		
A	Rominger, Aidan M.	BS	WLDL				
A	Roosz, Megan E.	BS	ASCI	PRMD			
A	Rosenkrans, Ashley C.	BS	ASCI	BISC			
A	Rosselli Irizarry, Alfonso R.	BS	SFS				
A	Rowe, Justin M.	BS	ASCI	PRMD	BIOS		
A	Rulon, Kaleb R.	BS	AGEC	CMRK	FARM		
A	Rulon, Kaleb R.	BS	ASM				
A	Rust, Sydney H.	BS	ASCI	PRMD	HORT		
A	Sacksteder, Katarina M.	BS	NREV	LDRS	ANTR		
A	Sanchez, Grant J.	BS	AGBS	AGMR	GFAS		
A	Schaider, Madylin X.	BS	PLSC				
A	Schenk, Claire M.	BS	NREV	ENPE	ENPP		
A	Schluttenhofer, Adam T.	BS	BCHM	PMED			
A	Schmitt, Sadie J.	BS	AGBS	AGFN	HRMM	FARM	

College	Name	Degree	Major	Conc 1	Minor 1	Minor 2	Minor 3
A	Schriner, Jenna N.	BS	AGBS	AGMR			
A	Schuler, Ellie K.	BS	AGBS	AGMG	CRPS	FARM	
A	Schuler, John I.	BS	AGBS	AGFN			
A	Scinto, Sara B.	BS	ASCI	PRMD	POL		
A	Scott, Ryleigh J.	BS	FDSC		FNN		
A	Sepko, Emily M.	BS	ASCI	PROD			
A	Serrano, Jasmine	BS	ASCI	PRMD	BIOS		
A	Shah, Tejashree H.	BS	FDSC		FERM		
A	Sheets, Jocelyn V.	BS	BCHM		BIOS		
A	Sheller, Caitlyn M.	BS	AGBS	AGMR			
A	Silvers, Olivia G.	BS	HOSC	HPMK			
A	Sims, Claudia L.	BS	AGBS	AGMG			
A	Sipes, Abigail	BS	BCHM		CHNS		
A	Slagel, Kari A.	BS	AGCM		NREV		
A	Smeltz, Jackson R.	BS	AGBS	AGMG			
A	Smiley, Ethan T.	BS	PLSC				
A	Smith, Jared T.	BS	PGBB				
A	Smolek, Hunter L.	BS	AGBS	AGMG	CRPS	FARM	
A	Snyder, Tess M.	BS	BCHM		FERM		
A	Soewardjono, Reyhan A.	BS	FDSC				
A	Solomon, Ryan W.	BS	ASM				
A	Southern, Brooke E.	BS	ASCI	PRMD	BIOS		
A	Stanbary, Autumn R.	BS	BCHM		WGSS		
A	Stansberry, McKeeley C.	BS	ASCI	PRMD	BIOS		
A	Staph, Isabelle K.	BS	WLDL		ENPP		
A	Steele, Kaitlyn M.	BS	ASCI	PRMD			
A	Stevens, Ireland E.	BS	FDSC				
A	Stevens, Jack W.	BS	IBIO		ARTS		
A	Stevenson, Aaron C.	BS	BCHM				
A	Stiver, Michaela G.	BS	AGBS	AGFN	FARM		
A	Strong, Ethan G.	BS	ASM		CRPS	FARM	
A	Subramani, Sangavi	BS	FDSC				
A	Sullivan, Marissa K.	BS	ASCI	ANAG	FARM		
A	Sumner, Molly T.	BS	ASCI	PRMD			
A	Surman, Maria I.	BS	INAG		AQSC		
A	Swafford, Kyle V.	BS	AGED		NREV		
A	Swain, Emma E.	BS	AGBS	AGMR			
A	Swanson, Mallory N.	BS	ASCI	BEHV			
A	Tang, Yao	BS	ASCI	PRDT			
A	Tankersley, Karena L.	BS	BCHM		HURS		
A	Tao, Jingjing	BS	AGEC	APAE			
A	Taylor, Caitlin M.	BS	AGEC	APAE	COMU	CRPS	
A	Taylor, Mackenzie L.	BS	ASCI	PROD			
A	Ternet, Garret E.	BS	FARM				
A	Tharp, August L.	BS	ASCI	BEHV	BIOS		
A	Tharpe, Linda E.	BS	PLSC		PLTP		
A	Thomas, Gretchen M.	BS	IBIO				
A	Thomas, Marguerite L.	BS	AGBS	AGMG	GFAS		
A	Tibbets, Leslie A.	BS	ASCI	PRMD			
A	Titus, Isabelle C.	BS	AGCM		NREV		
A	Tomey, Rylee D.	BS	WLDL				

College	Name	Degree	Major	Conc 1	Minor 1	Minor 2	Minor 3
A	Tonissen, Sara E.	BS	ASCI	PRMD	BIOS		
A	Toogood, Audrey R.	BS	PLSC		ANTR		
A	Trabert, Leonie M.	BS	PGBB				
A	Trainor, Charles W.	BS	ASM				
A	Tricker, Emily M.	BS	AGBS	AGMG	CRPS		
A	Trujillo, Alicia M.	BS	BCHM		FRSC		
A	Tuazon, Hayley A.	BS	ASCI	PRMD			
A	Utter, Jack W.	BS	ASM				
A	Utter, Jack W.	BS	AGBS	AGMG	TSCM		
A	Vargas, Martin A.	BS	AGBS	AGMG			
A	Vaughn, Owen B.	BS	FDSC				
A	Verhaeghe, Taylor A.	BS	AGBS	AGMR			
A	Vicino, Anthony J.	BS	FDSC		FERM		
A	Vijil, Kaitlyn N.	BS	ASCI	PRMD			
A	Villarreal, Alejandro G.	BS	FDSC		FERM		
A	Vinup, Brianna N.	BS	WLDL		POL		
A	Vogt, Grant M.	BS	SLMK		CRPS		
A	Waddey, Benjamin T.	BS	BCHM		HIST		
A	Wade, Brody A.	BS	NREV	LDRS			
A	Wagner, Dustin J.	BS	ASCI	PRMD			
A	Wait, Carter M.	BS	ASM				
A	Walker, Hannah G.	BS	AGCM		POL		
A	Wallar, Rowan C.	BS	FDSC		FDAG		
A	Walsh, Evan M.	BS	FARM				
A	Walsh, Evan M.	BS	ASM				
A	Warble, Grace A.	BS	HOSC	HPMK	FURN	WPMT	
A	Warrick, Andrew E.	BS	PGBB		BUEC		
A	Washer, Emilie A.	BS	AQSC	MAFB	ENPP		
A	Watson, Garrett A.	BS	SFS				
A	Weaver, Luke D.	BS	ASM		FDAG		
A	Weilbaker, John M.	BS	SLMK		CRPS		
A	Weldon, Cole M.	BS	SUAS	AMGT			
A	Welty, Grant C.	BS	AGEC	APAE	ASM	FARM	
A	Westrich, Elliot D.	BS	ASCI	PRMD	HIST		
A	Wilhoit, Kasey R.	BS	SUAS	AMGT			
A	Williams, Jackson C.	BS	AGBS	AGMG			
A	Willis, Emma R.	BS	ASCI	ANAG			
A	Wischmeier, Ethan J.	BS	AGEC	CMRK			
A	Wolfe, Kaitlyn M.	BS	ASCI	PRMD	BIOS		
A	Workman, Laura D.	BS	NREV	EMEC	EEE		
A	Worley-Peterson, Amy K.	BS	NREV	ENPE			
A	Wyatt, Gwynne K.	BS	WLDL		PSY		
A	Wzientek, Cole M.	BS	WLDL		FAQS		
A	Yin, Zhuxin	BS	FDSC				
A	York, Sara E.	BS	BCHM		BTCH		
A	Young, Jordan M.	BS	NREV	ENPE			
A	Zapf, Kathleen K.	BS	HOSC	HPMK	CRPS	ENGL	
A	Zay, Rees A.	BS	SLMK				
A	Zhang, Yichen	BS	ASCI	PRMD	FRSC		
A	Zhou, Leying	BS	AGBS	AGFN	STAT		
A	Zimmer, Emily E.	BS	WLDL				

College	Name	Degree	Major	Conc 1	Minor 1	Minor 2	Minor 3
Bachelor of Science in Agricultural Engineering							
AB	Boland, Michael M.	BSAGE	XEAG				
AB	Brustolin Gurgel, Juliana	BSAGE	ENRE		HORT		
AB	Cao, Loan	BSAGE	ENRE		MGMT		
AB	Choi, Young Un	BSAGE	XEAG				
AB	Coe, Edmond C.	BSAGE	XEAG				
AB	Fidler, Michael D.	BSAGE	XEAG		PSY		
AB	Foley, Daniel G.	BSAGE	XEAG				
AB	Gobel, Matthew S.	BSAGE	XEAG				
AB	Hilgeman, Tyler B.	BSAGE	XEAG				
AB	Maayan, Ari N.	BSAGE	ENRE				
AB	McNicholas, Clare M.	BSAGE	XEAG		COMU		
AB	Mellady, Colin R.	BSAGE	ENRE				
AB	Qi, Qingzhuo	BSAGE	XEAG				
AB	Sprague, Nathan C.	BSAGE	XEAG		ASM		
AB	Thomas, Haley E.	BSAGE	ENRE		ENPP		
Bachelor of Science in Biological Engineering							
AB	Alfieri, Sofia R.	BSBE	BIEN	CBOE	BTCH		
AB	Asthana, Maansi	BSBE	BIEN	CBOE	SPNS	BTCH	BIOS
AB	Atkins, Ruby E.	BSBE	BIEN		CHEM		
AB	Bauer, Josephine M.	BSBE	BIEN	CBOE	BTCH		
AB	Bebar, Zachary J.	BSBE	BIEN	CBOE	BTCH		
AB	Biddinger, Allison A.	BSBE	BIEN	CBOE	BTCH		
AB	Booth, Kelsey L.	BSBE	BIEN				
AB	Carlson, Caitlin A.	BSBE	BIEN	PHPE			
AB	Chan, Matthew Y.	BSBE	BIEN	CBOE	BTCH	BINF	
AB	Cooper, Sydney N.	BSBE	BIEN	CBOE	BTCH		
AB	Dasaro, Sophia R.	BSBE	BIEN	PHPE			
AB	Dextre, Andres A.	BSBE	BIEN	CBOE	BTCH	BCHM	BINF
AB	Didat, Olivia R.	BSBE	BIEN	CBOE	BTCH		
AB	Dyvik, Antonia	BSBE	BIEN	CBOE			
AB	Easton, Alyssa N.	BSBE	BIEN	CBOE	FRNC	BTCH	
AB	Engle, Emily M.	BSBE	BIEN	FBPE	FDSC	FERM	
AB	Ettestad, Sarah K.	BSBE	BIEN	CBOE	BTCH		
AB	Fields, Jackson K.	BSBE	BIEN	CBOE	BTCH		
AB	Fisher, Sydney E.	BSBE	BIEN				
AB	Flandermeyer, Laura E.	BSBE	BIEN	BENV			
AB	Fleck, Gentry E.	BSBE	BIEN	CBOE	HIST	BTCH	
AB	Foley, Madolyn E.	BSBE	BIEN	FBPE	FDSC	GLES	NUTR
AB	Forkpah, Erick D.	BSBE	BIEN	CBOE	BUEC	BTCH	
AB	Frazier, Elizabeth M.	BSBE	BIEN				
AB	Gonzalez Montanez, Ian A.	BSBE	BIEN				
AB	Granat, Victoria A.	BSBE	BIEN	CBOE	PLBI		
AB	Heffner, Sarah N.	BSBE	BIEN	CBOE	BCHM	GLES	
AB	Johnson, Liam F.	BSBE	BIEN	CBOE	BTCH		
AB	Khanna, Dhruv	BSBE	BIEN				
AB	Krick, Katherine R.	BSBE	BIEN	FBPE	ANSC		

College	Name	Degree	Major	Conc 1	Minor 1	Minor 2	Minor 3
AB	Lee, Jieun	BSBE	BIEN	CBOE	BIOS		
AB	Leland, Mari E.	BSBE	BIEN	CBOE	SPRO		
AB	Long, Jacob N.	BSBE	BIEN	CBOE	BTCH		
AB	Lurk, Cassidy R.	BSBE	BIEN	FBPE	FERM		
AB	Maher, Jack J.	BSBE	BIEN	CBOE	BTCH		
AB	Mavity, Sara L.	BSBE	BIEN	CBOE	BTCH	FERM	
AB	McCool, Michael M.	BSBE	BIEN	CBOE			
AB	Mollenhauer, Julia E.	BSBE	BIEN	CBOE	SPNS	BTCH	
AB	Niebrugge, Kaitlyn M.	BSBE	BIEN	CBOE	ANTR	BTCH	
AB	Nieters, Jessica A.	BSBE	BIEN	BENV			
AB	Pecher, Sophie A.	BSBE	BIEN	CBOE			
AB	Prakash, Madhumitha	BSBE	BIEN	CBOE	BTCH		
AB	Renwick, Sean J.	BSBE	BIEN	CBOE	GRMN	BTCH	
AB	Saylor, Dalton M.	BSBE	BIEN	CBOE	BTCH		
AB	Schmitt, William F.	BSBE	BIEN	CBOE	BIOS	BTCH	ECON
AB	Shafer, Peyton J.	BSBE	BIEN	CBOE	BTCH		
AB	Singh, Ekta B.	BSBE	BIEN	CBOE	BTCH		
AB	Slaughter, Rebecca C.	BSBE	BIEN	CBOE	SPNS	BTCH	
AB	Sorg, Kate M.	BSBE	BIEN	PHPE			
AB	Stickels, Annika N.	BSBE	BIEN	CBOE	BTCH		
AB	Subramani, Sangavi	BSBE	BIEN	FBPE			
AB	Swaminathan Ravichand, Vishwajit	BSBE	BIEN	CBOE			
AB	Szadowski, Hailey M.	BSBE	BIEN	CBOE	BTCH	BCHM	BINF
AB	Tanaka, Kian I.	BSBE	BIEN	FBPE	FERM		
AB	Thompson, Miles A.	BSBE	BIEN	CBOE	BTCH		
AB	Tully, Christina A.	BSBE	BIEN	CBOE	BTCH		
AB	Voglewede, Matthias A.	BSBE	BIEN	PHPE			
AB	Welsh, Ian D.	BSBE	BIEN	CBOE	BTCH		

Bachelor of Science in Forestry

A	Bernabe, Lina E.	BSFOR	FORS		UFOR		
A	Crowel, Wyatt C.	BSFOR	FORS				
A	Duke, Russell J.	BSFOR	FORS				
A	Hall, Hunter D.	BSFOR	FORS				
A	Kerper, Carson J.	BSFOR	FORS	FRMG	WLFS		
A	Mcintire, Bailey M.	BSFOR	FORS		UFOR		
A	Moore, Cody L.	BSFOR	FORS		WPMT		
A	Nemeth, Zachary T.	BSFOR	FORS		UFOR		
A	Wartenberg, Thomas P.	BSFOR	FORS	UFOR			

Bachelor of Science in Landscape Architecture

A	Barsanti, Nathan J.	BSLA	LARC				
A	Battista, Jacob S.	BSLA	LARC				
A	Cai, Shangzhe	BSLA	LARC				
A	Cody, Zachary F.	BSLA	LARC				
A	Cook, Nicholas S.	BSLA	LARC		NREV		
A	Davis, Krzysztof B.	BSLA	LARC				
A	Emminger, Rachel M.	BSLA	LARC				
A	Fisher, Abigail N.	BSLA	LARC				

College	Name	Degree	Major	Conc 1	Minor 1	Minor 2	Minor 3
A	Jost, Marcus L.	BSLA	LARC				
A	Keffaber, Payten M.	BSLA	LARC				
A	Liao, Jitian	BSLA	LARC				
A	Lucas, Corinne G.	BSLA	LARC				
A	MacNulty, Michael J.	BSLA	LARC		HORT		
A	Marischen, William J.	BSLA	LARC				
A	Morse, Margaret A.	BSLA	LARC		SPRO		
A	Sanford, Christian A.	BSLA	LARC				
A	Teune, Kendra N.	BSLA	LARC				
A	Vinyard, Garrett D.	BSLA	LARC				
A	Zhang, Wanting	BSLA	LARC		ARTS		
A	Zhang, Yuan	BSLA	LARC				
A	Zhu, Haoyu	BSLA	LARC				

Certificate in Dean's Scholars

A	Davis, Haley J.	CERT	DSPG				
A	Hicks, Clayton T.	CERT	DSPG				
A	Johnson, Grace E.	CERT	DSPG				
A	Kiselica, Megan A.	CERT	DSPG				
A	Lehe, Micah D.	CERT	DSPG				
A	Maneke, Erika L.	CERT	DSPG				
A	Mosier, Kara A.	CERT	DSPG				
A	Nunn, Madeleine E.	CERT	DSPG				
A	Sprague, Nathan C.	CERT	DSPG				
A	Subramani, Sangavi	CERT	DSPG				
A	Swanson, Mallory N.	CERT	DSPG				
A	Tonissen, Sara E.	CERT	DSPG				

Certificate in Industrial Selling

A	Innis, Garrett R.	CERT	IDSL				
A	Krizan, Conner R.	CERT	IDSL				
A	Montgomery, Elizabeth J.	CERT	IDSL				

Certificate in Leadership Development Program

A	Hicks, Clayton T.	CERT	LDDP				
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