MEMORANDUM TO: Ogden College of Science and Engineering Curriculum Committee

Dr. Melanie Autin
Dr. Nahid Gani
Dr. Scott Grubbs
Dr. Ting-Hui Lee
Dr. Andy Mienaltowski
Dr. Les Pesterfield
Dr. Todd Willian
Mr. Jason Wilson
Dr. Bangbo Yan

FROM: Dr. Stuart Burris, Chair

SUBJECT: Agenda for <u>Thursday, March 7, 2024</u>

A. OLD BUSINESS:

I. Consideration of the minutes of the February 2024 meeting.

B. NEW BUSINESS:

Type of item	Description of Item & Contact Information
Informational Proposals not attached.	**<u>The following items were sent through the expedited process:</u>** **Add or Revise Course Student Learning Outcomes & Content Outlines** AGRI 280 BIOL 113, 114, 120, 121, 122, 123, 131, 207, 208, 351, 372, 380, 390 CIT 300, 302, 310, 312, 332, 352, 370, 372, 414, 432, 438, 484 CS 382, 421 MATH 127, 305
Action	**Proposal to Revise a Course** ANSC 232: Basic Equitation Contact: Paige Smith, paige.smith@wku.edu, 615-946-1576
Action	**Proposal to Create a New Course** ANSC 362: Equine Facilities Management Contact: Paige Smith, paige.smith@wku.edu, 615-946-1576
Action	**Proposal to Revise a Program** Ref. 508: Agriculture, Bachelor of Science Contact: Paul Woosley, paul.woosley@wku.edu, 270-745-3151
Action	**Proposal to Revise a Course** GEOG 350: Economic Geography Contact: Amy Nemon, amy.nemon@wku.edu, 270-745-3082
Action	**Proposal to Revise a Course** GEOG 481: Tourism Geography Contact: Amy Nemon, amy.nemon@wku.edu, 270-745-3082

Action	Proposal to Reactive a Course EE 432: Power Systems II Contact: Mark Cambron, mark.cambron@wku.edu, 270-745-8868
Action	**Proposal to Revise a Course** SEAS 325: Survey of Building Systems Contact: Shahnaz Aly, shahna.aly@wku.edu, 270-745-5849
Action	**Proposal to Revise a Program** Ref. 629P, 629: Computer Science, Bachelor of Science Contact: Guangming Xing, Guangming.xing@wku.edu, 270-991-4538
Action	**Proposal to Revise a Program** Ref. 555P, 555: Computer Information Technology Contact: Stacy Wilson, stacy.wilson@wku.edu, 270-745-6394
Action	**Proposal to Revise a Program** Ref. 537P, 537: Electrical Engineering, Bachelor of Science Contact: Mark Cambron, mark.cambron@wku.edu, 270-745-8868

C. **OTHER BUSINESS**

Minutes – OCSE Curriculum Committee **February 2023**

Members Present:
Meeting held via email

FROM: Dr. Stuart Burris, Chair

The meeting commenced via email on January 30th at 9:15am.

NEW BUSINESS:

Action Agenda:
BIOL 497: Autin/Pesterfield; approved

Other Business:
None

Motion passed and meeting adjourned on January 31st at 2:59pm.

Course Change Request

Date Submitted: 02/23/24 11:21 am

Viewing: ANSC 232 : Basic Equitation

Last approved: 12/08/23 3:18 am

Last revision: 02/23/24 11:21 am

Changes proposed by: wll99339

Catalog Pages referencing this course

Animal Science (ANSC)

Department of Agriculture and Food Science

Proposed Action

In Workflow

1. **AGRI Approval**
2. **SC Dean**
3. **SC Curriculum Committee**
4. Undergraduate Curriculum Committee
5. University Senate
6. Provost
7. Course Inventory

Approval Path

1. 02/27/24 9:27 am Paul Woosley (paul.woosley): Approved for AGRI Approval
2. 03/01/24 8:59 am Stuart Burris (stuart.burris): Approved for SC Dean

History

1. Dec 8, 2023 by William Willian (todd.willian)

Active

Contact(s)

Name	E-mail	Phone
Paige Smith	Paige.smith@wku.edu	615-946-1576

Review Type: Full Review ~~Expedited~~

Term for implementation: Fall 2024

Academic Level	Undergraduate		
Course prefix (subject area)	ANSC - Animal Science	Course number	232
Department	Agriculture		
College	Science and Engineering		

Course title
Basic Equitation

Abbreviated course title: BASIC EQUITATION

Course description
For students with little previous experience in horsemanship. Basic disciplines of hunt seat and stock seat horsemanship and selection, care and use of horses and equipment are included.

Credit hours: 3 ~~2~~

Repeatable
Yes
Number of repeats: 2
For maximum credits: 6 ~~2~~

Default grade type: Standard Letter
Alternate grade type(s):

Is this course intended to span more than one term?

No

Schedule type
Lab

CIP Code: 010507 - Equestrian/Equine Studies.

Does this course have prerequisites

No

Corequisites

Equivalent Courses

Restrictions:

College restriction? No

Field of study restriction/major? No

Classification restriction? No

Departmental Restrictions

Reason for changing the course

Additional contact hours will facilitate greater improvement in riding technique and allow for additional instruction regarding safe handling guidelines for novice equine riders. ~~To add course objectives~~

Is this related to other courses at WKU?

No

What departments/programs have been consulted concerning potential impact (e.g. to possible duplication or conflict, changed corequisite or prerequisite for equivalent courses, etc.)? Please provide names and dates for individuals consulted.

N/A

Is this course part of a program that leads to teacher certificate? No

Are you seeking Colonnade approval for this course? No

Student Learning Outcomes

#	Student Learning Outcomes
1	Display mastery of general horsemanship skills, including tying, grooming, bathing, leading, tacking up.
2	Display a thorough understanding of safely handling and riding a horse.
3 ~~2~~	Summarize an understanding of basic horse ownership and care, including hoof care, preventative care, management, and feeding.
4 ~~3~~	Execute improvement in equitation in the Western or English discipline.
5 ~~4~~	Execute mastery of riding a pattern test and using basic forms of rider communication.

Content outline

#	Topic
1	Safety around a horse
2	Basic horse grooming and care
3	Saddle and Bridle parts
4	Proper saddling and bridling
5	Horsemanship seat, maneuvering, gaits
6	Riding a pattern

Student expectations and requirements

Tentative texts and course materials

Special equipment, materials, or library resources needed

Additional information

Supporting documentation

Reviewer Comments

Key: 534

Course Change Request

New Course Proposal

Date Submitted: 02/01/24 11:54 am

Viewing: ANSC 362 : Equine Facilities Management

Last revision: 02/01/24 11:54 am

Changes proposed by: wll99339

Proposed Action

In Workflow

1. **AGRI Approval**
2. **SC Dean**
3. **SC Curriculum Committee**
4. Undergraduate Curriculum Committee
5. University Senate
6. Provost
7. Course Inventory

Approval Path

1. 02/01/24 4:17 pm Paul Woosley (paul.woosley): Approved for AGRI Approval
2. 03/01/24 8:59 am Stuart Burris (stuart.burris): Approved for SC Dean

Active

Contact(s)

Name	E-mail	Phone
Paige Smith	paige.smith@wku.edu	615-946-1576

Term for implementation	Fall 2024		
Academic Level	Undergraduate		
Course prefix (subject area)	ANSC - Animal Science	Course number	362
Department	Agriculture		
College	Science and Engineering		
Course title			

Equine Facilities Management

Abbreviated course title: Equine Facilities Management

Course description

Discussion of various types of equine facilities and their proper management. Hands-on activities associated with private, public, and event management will be incorporated into lecture material.

Credit hours: 3

Repeatable

No

Default grade type: Standard Letter

Alternate grade type(s):

Is this course intended to span more than one term?

No

Schedule type

Lecture/Lab

CIP Code: 010507 - Equestrian/Equine Studies.

Does this course have prerequisites

Yes

Prerequisites

And/Or	(	Course/Test Code	Min Grade/Score	Academic Level	)	Concurrency?
	(	ANSC 130	D	UG	)	
And	(	ANSC 131	D	UG	)	

Corequisites

Equivalent Courses

Restrictions:

College restriction? No

Field of study restriction/major? No

Classification restriction? No

Departmental Restrictions

Reason for developing the proposed course

This course will prepare students for employment opportunities within the equine facility management industry.

Is this related to other courses at WKU?

No

What departments/programs have been consulted concerning potential impact (e.g. to possible duplication or conflict, changed corequisite or prerequisite for equivalent courses, etc.)? Please provide names and dates for individuals consulted.

None

How many sections of this course per academic year will be offered?

1

How many students per section are expected to enroll in this proposed course?

15

How many students per academic year are expected to enroll?

15

How were these projections calculated? Explain any supporting evidence/data you have for arriving at these projections:

One section per year based off of current enrollment in other equine science classes

Is this course part of a program that leads

No

to teacher certificate?

Are you seeking Colonnade approval for this course? No

Student Learning Outcomes

#	Student Learning Outcomes
1	Identify the similarities and differences in private, public, and event facilities.
2	Describe the day to day routine at each of the different types of facilities.
3	Evaluate the efficient allocation of resources at different types of equine facilites.
4	Recognize the individual needs of facilities.
5	Describe why different disciplines need different footing types and depths.
6	Analyze different types of budgets for farms and facilities.

Content outline

#	Topic
1	Differences and similarities of private, public, and event facilities
2	Design of private, public, and event facilities
3	Management on a day to day basis
4	Management on a seasonal basis
5	Composition, cost and biological response of arena footings
6	Budget of equine boarding facilities
7	Equine event facility contracts and budgets

Student expectations and requirements

Implementing tasks learned in class to assist in maintenance of the WKU Horse barn facilities.

Tentative texts and course materials

None

Special equipment, materials, or library resources needed

None

Additional information

Supporting documentation

Reviewer Comments

Key: 9508

Program Change Request

Date Submitted: 02/23/24 11:40 am

Viewing: 508 : Agriculture, Bachelor of Science

Last approved: 04/10/23 10:33 am

Last edit: 02/23/24 11:40 am

Changes proposed by: wll99339

Catalog Pages
Using this Program
Agriculture, Bachelor of Science (508)

Proposed Action

In Workflow

1. **AGRI Approval**
2. **SC Dean**
3. **SC Curriculum Committee**
4. Professional Education Council
5. Undergraduate Curriculum Committee
6. University Senate
7. Provost
8. Program Inventory

Approval Path

1. 02/27/24 9:27 am Paul Woosley (paul.woosley): Approved for AGRI Approval
2. 03/01/24 8:58 am Stuart Burris (stuart.burris): Approved for SC Dean

History

1. May 20, 2021 by Rheanna Plemons (rheanna.plemons)
2. May 25, 2021 by Rheanna Plemons (rheanna.plemons)
3. Jun 10, 2021 by Jessica Dorris (jessica.dorris)
4. Jul 16, 2021 by Jessica Dorris (jessica.dorris)

5. Jul 29, 2021 by Jessica Dorris (jessica.dorris)
6. Apr 11, 2022 by Jessica Dorris (jessica.dorris)
7. Jan 10, 2023 by Jessica Dorris (jessica.dorris)
8. Jan 10, 2023 by Jessica Dorris (jessica.dorris)
9. Apr 10, 2023 by William Willian (todd.willian)

Active

Contact Person

Name	Email	Phone
Paul Woosley	paul.woosley@wku.edu	270-745-3151

Term of Implementation	2024-2025
Program Reference Number	508
Review Type	Full Review
Academic Level	Undergraduate
Program Type	Major
Degree Types	Bachelor of Science
Department	Agriculture
College	Science and Engineering
Program Name (eg. Biology)	Agriculture, Bachelor of Science

Will this program have concentrations?

Yes

Concentrations

Concentrations

Agribusiness (AGBU)
Agriculture Education (AGED)
Agronomy Plant (AGPS)
Agronomy Soil (AGSS)

Animal Science (AGAS)
Horse Science (AGHS)
Dairy Science (AGDS)
General Agriculture (AGGA)
Horticulture (AGHO)
Turf & Golf Course Management (AGTG)
Agriculture Systems (AGSY)

CIP Code	01.0000 - Agriculture, General.
Will this program lead to teacher certification?	Yes

Does the proposed program contain 25% or more new content not previously taught in another course at WKU? If yes, contact the Office of the Provost for additional SACSCOC proposal requirements

No

Catalog Content

Program Overview (Catalog field: Overview tab)

The major in agriculture (508) consists of several concentrations allowing students to specialize in areas of interest such as Agronomy, Agribusiness, Agricultural Education, Agricultural Systems, Animal Science, Dairy Science, Horticulture, Horse Science, ~~agronomy, agribusiness, agricultural education, agricultural systems, animal science, dairy science, horticulture, horse science,~~ and Turf ~~turf~~ and Golf Course Management. ~~golf course management.~~

Curriculum Requirements (Catalog field: Program Requirements)

Program Requirements (36-80 hours)

Approved Shared Content from /shared/undergraduate-major-requirements/
Last Approved: Jul 6, 2023 12:58pm

A baccalaureate degree requires a minimum of 120 unduplicated semester hours. More information can be found at www.wku.edu/registrar/degree_certification.php.
Students who began WKU in the Fall 2014 and thereafter should review the Colonnade requirements located at: https://www.wku.edu/colonnade/colonnaderequirements.php.

This major in agriculture requires a minimum of 36-80 semester hours in agriculture and leads to a Bachelor of Science degree. Electives are chosen from agriculture courses focusing on a concentration, when approved by an assigned advisor, complete the minimum total of 36-80 semester hours in agriculture. With the exception of the General Agriculture option, no other minor or major is required for the student following the curriculum for this major in agriculture. At least half of the semester hours in the major must be in courses numbered 300 or above. All students must take the following courses outside of the major:

Required Courses Outside of the Major

Mathematics Course		
MATH 115	Applied College Algebra (or higher) [1]	3
Chemistry Courses		
Select two of the following:		6
CHEM 105	Fundamentals of General Chemistry	
CHEM 107	Fundamentals of Organic Chemistry	
CHEM 120	College Chemistry I	
CHEM 222	College Chemistry II	
Chemistry Labs		
Select two hours of the following:		2
CHEM 106	Fundamentals of General Chemistry Laboratory	
CHEM 108	Fundamentals of Organic Chemistry Laboratory	
CHEM 121	College Chemistry I Laboratory	
CHEM 223	College Chemistry II Laboratory	
Biology Course and Lab [2]		
BIOL 120	Biological Concepts: Cells Metabolism and Genetics	3
BIOL 121	Biological Concepts: Cells, Metabolism, and Genetics Lab	1
Total Hours		15

[1] Students focusing in Pre-Veterinary Medicine must take MATH 116 or higher.

[2] Students pursuing the Horticulture Concentration may take BIOL 120 and BIOL 121 or BIOL 122 and BIOL 123.

The following courses are required for each concentration:

Agribusiness Concentration

Basic Agriculture Courses		
AGRO 110	Introduction to Plant Science	3
ANSC 140	Introduction to Animal Science	3
AGEC 160	Introduction to Agribusiness and Agricultural Entrepreneurship	3
AGMC 170 & AGMC 171	Introduction to Agricultural Mechanization and Introduction to Agricultural Mechanization Laboratory	3
AGRI 175	University Experience – Agriculture	1
AGMC 176	Course AGMC 176 Not Found	2
AGRI 291	Introduction to Data Analysis and Interpretation	3
or AGRI 491	Data Analysis and Interpretation	

Select one of the following:		3
AGRO 320	Crop Physiology	
ANSC 345	Principles of Animal Nutrition	
AGEC 360	Agricultural Economics	
AGMC 326	Precision Agriculture	
AGRO 350	Soils	3
AGRI 397	Agriculture Career Planning	1
AGRI 398	Seminar	1
AGRI 494	Contemporary Agricultural Issues	3
Agribusiness Courses		
AGEC 261	Agricultural Accounting	3
~~MGT 210~~	~~Organization and Management~~	~~3~~
~~MKT 220~~	~~Basic Marketing Concepts~~	~~3~~
AGEC 361	Farm Management	3
AGEC 362	Agricultural Marketing	3
AGEC 366	Agricultural Sales and Services	3
~~AGEC 460~~	~~Course AGEC 460 Not Found~~	
~~AGEC 461~~	~~Advanced Farm Management~~	
~~AGEC 468~~	~~World Food Development~~	
~~AGRI 369~~	~~Cooperative Education in Agriculture II~~	
AGEC 463	Agriculture Finance	3
Agribusiness Elective		
~~Select one of the following:~~		~~3~~
Select 6 hours of upper-level agriculture electives: AGEC, AGED, AGMC, AGRI, AGRO, ANSC, or HORT		6
Total Hours		50

Agricultural Education Concentration

Basic Agriculture Courses		
AGRO 110	Introduction to Plant Science	3
ANSC 140	Introduction to Animal Science	3
AGEC 160	Introduction to Agribusiness and Agricultural Entrepreneurship	3
AGMC 170 & AGMC 171	Introduction to Agricultural Mechanization and Introduction to Agricultural Mechanization Laboratory	3

AGMC 171	Introduction to Agricultural Mechanization Laboratory	1
AGRI 175	University Experience – Agriculture	1
AGMC 176	Course AGMC 176 Not Found	2
AGRI 291	Introduction to Data Analysis and Interpretation	3
or AGRI 491	Data Analysis and Interpretation	
Select one of the following:		3
AGRO 320	Crop Physiology	
ANSC 345	Principles of Animal Nutrition	
AGEC 360	Agricultural Economics	
AGMC 326	Precision Agriculture	
AGRO 350	Soils	3
AGRI 397	Agriculture Career Planning	1
AGRI 494	Contemporary Agricultural Issues	3
Teacher Certification Requirements		
AGED 250	Introduction to Teacher Education in Agriculture [1]	3
or EDU 250	Discover Teaching: Introduction to Teacher Education	
PSY 310	Educational Psychology: Development and Learning [1]	3
EDU 260	Classroom Assessment	3
EDU 350	Student Diversity and Differentiation	3
EDU 360	Behavior and Classroom Management in Education	3
EDU 489	Student Teaching Seminar	2,3
AGED 200	Foundations of Agricultural Education	1
AGED 300	Youth Development for Agricultural Educators	3
AGED 470	Methods of Teaching in Agricultural Education	3
AGED 471	Organization and Planning in Agricultural Education	3
AGMC 371	Agricultural Mechanics	1
AGMC 372	Agricultural Mechanics Laboratory	2
HORT 316	Greenhouse Maintenance and Operation	2
HORT 317	Greenhouse Maintenance and Operation Laboratory	1
SPED 330	Introduction to Exceptional Education: Diversity in Learning	3
AGRI 398	Seminar	1
SEC 490	Student Teaching	10
Total Hours		76-77

1

Courses require a grade of C or better.

Agriculture Systems Concentration

Basic Agriculture Courses		
AGRO 110	Introduction to Plant Science	3
ANSC 140	Introduction to Animal Science	3
AGEC 160	Introduction to Agribusiness and Agricultural Entrepreneurship	3
AGMC 170 & AGMC 171	Introduction to Agricultural Mechanization and Introduction to Agricultural Mechanization Laboratory	3
AGRI 175	University Experience – Agriculture	1
AGMC 176	Course AGMC 176 Not Found	2
AGRI 291	Introduction to Data Analysis and Interpretation	3
or AGRI 491	Data Analysis and Interpretation	
Select one of the following:		3
AGRO 320	Crop Physiology	
ANSC 345	Principles of Animal Nutrition	
AGEC 360	Agricultural Economics	
AGMC 326	Precision Agriculture	
AGRO 350	Soils	3
AGRI 397	Agriculture Career Planning	1
AGRI 398	Seminar	1
AGRI 494	Contemporary Agricultural Issues	3
Agriculture Systems Courses		
~~AGMC 172 & AGMC 173~~	~~Course AGMC 172 Not Found and Course AGMC 173 Not Found~~	~~3~~
AGMC 373 & AGMC 374	Farm Power—Mechanical and Machinery and Farm Power—Mechanical and Machinery Laboratory	3
AGMC 377 & AGMC 378	Farm Machinery and Farm Machinery Laboratory	3
AGMC 425	Applied Hydraulics and Pneumatics	3
AGEC 366	Agricultural Sales and Services	3
MFGE 227	Introduction to Manufacturing Methods	3
Agriculture Systems Elective		
~~Select 3 credit hours from any AGEC, AGED, AGMC, AGRI, AGRO, ANSC, or HORT course~~		~~3~~

Select 6 credit hours from any AGEC, AGED, AGMC, AGRI, AGRO, ANSC, or HORT course		6
Total Hours		50

Agronomy (Plant Science) Concentration

Basic Agriculture Courses		
AGRO 110	Introduction to Plant Science	3
ANSC 140	Introduction to Animal Science	3
AGEC 160	Introduction to Agribusiness and Agricultural Entrepreneurship	3
AGMC 170 & AGMC 171	Introduction to Agricultural Mechanization and Introduction to Agricultural Mechanization Laboratory	3
AGRI 175	University Experience – Agriculture	1
AGMC 176	Course AGMC 176 Not Found	2
AGRI 291	Introduction to Data Analysis and Interpretation	3
or AGRI 491	Data Analysis and Interpretation	
Select one of the following courses:		3
AGRO 320	Crop Physiology	
ANSC 345	Principles of Animal Nutrition	
AGEC 360	Agricultural Economics	
AGMC 326	Precision Agriculture	
AGRO 350	Soils	3
AGRI 397	Agriculture Career Planning	1
AGRI 398	Seminar	1
AGRI 494	Contemporary Agricultural Issues	3
Agronomy – Plant Science Courses		
~~Select 18 hours from following courses:~~		~~18~~
Select 15 hours from following courses:		15
AGRO 310	Pest Management	
AGRO 352	Soil Fertility and Fertilizers	
AGRI 355	Biotechnology in Agriculture	
AGRO 409	Weed Science	
AGRO 410	Weed Science Laboratory	
AGRO 418	Plant Pathology	
AGRO 420	Forage Crops	

AGRO 421	Forage Crops Laboratory	
AGRO 422	Field Crops	
Agronomy Electives		
Select 3 credit hours from the following courses:		3
AGRI 315	Water in Food Production	
AGRI 369	Cooperative Education in Agriculture II	
AGRI 475	Selected Topics in Agriculture	
AGRO 452	Soil Microbiology	
AGRO 454	Soil Management and Conservation	
AGRO 457	Soil Formation, Classification and Mapping	
AGRO 458	Soil Formation, Classification and Mapping Laboratory	
AGRO 459	Techniques in Physical Soil Description	
AGRI 493	Sustainable Agriculture	
HORT 301	Introduction to Landscape Plants	
HORT 302	Introduction to Landscape Plants Laboratory	
HORT 313	Turfgrass Management	
HORT 316	Greenhouse Maintenance and Operation	
HORT 317	Greenhouse Maintenance and Operation Laboratory	
HORT 340	Greenhouse Crop Production	
HORT 407	Plant Propagation	
HORT 407G	Plant Propagation	
HORT 419	Fruit, Vegetable, and Vineyard Production	
AGEC 468	World Food Development	
AGEC 361	Farm Management	
AGMC 392	Turf Irrigation	
AGMC 393	Turf Irrigation Laboratory	
Required Laboratories		
AGRO 111	Plant Science Laboratory	1
AGRO 351	Soils Laboratory	1
Total Hours		49

Agronomy (Soil Science) Concentration

Basic Agriculture Courses		

AGRO 110	Introduction to Plant Science	3
ANSC 140	Introduction to Animal Science	3
AGEC 160	Introduction to Agribusiness and Agricultural Entrepreneurship	3
AGMC 170 & AGMC 171	Introduction to Agricultural Mechanization and Introduction to Agricultural Mechanization Laboratory	3
AGRI 175	University Experience – Agriculture	1
AGMC 176	Course AGMC 176 Not Found	
AGRI 291	Introduction to Data Analysis and Interpretation	3
or AGRI 491	Data Analysis and Interpretation	
Select one of the following:		3
AGRO 320	Crop Physiology	
ANSC 345	Principles of Animal Nutrition	
AGEC 360	Agricultural Economics	
AGMC 326	Precision Agriculture	
AGRO 350	Soils	3
AGRI 397	Agriculture Career Planning	1
AGRI 398	Seminar	1
AGRI 494	Contemporary Agricultural Issues	3
Required Agronomy Courses		
AGRO 351	Soils Laboratory	1
Select 12 credit hours from the following courses:		12
AGRO 352	Soil Fertility and Fertilizers	
AGRO 452	Soil Microbiology	
AGRO 454	Soil Management and Conservation	
AGRO 457 & AGRO 458	Soil Formation, Classification and Mapping and Soil Formation, Classification and Mapping Laboratory	
AGRO 459	Techniques in Physical Soil Description	
Select two of the following courses:		6
AGRO 310	Pest Management	
AGRO 409 & AGRO 410	Weed Science and Weed Science Laboratory	
AGRO 420 & AGRO 421	Forage Crops and Forage Crops Laboratory	
AGRO 422	Field Crops	

AGRI 493	Sustainable Agriculture	
AGRI 369	Cooperative Education in Agriculture II	
AGRI 475	Selected Topics in Agriculture	
Total Hours		46

Animal Science Concentration

Basic Agriculture Courses		
AGRO 110	Introduction to Plant Science	3
ANSC 140	Introduction to Animal Science	3
AGEC 160	Introduction to Agribusiness and Agricultural Entrepreneurship	3
AGMC 170 & AGMC 171	Introduction to Agricultural Mechanization and Introduction to Agricultural Mechanization Laboratory	3
AGRI 175	University Experience – Agriculture	1
AGMC 176	Course AGMC 176 Not Found	2
AGRI 291	Introduction to Data Analysis and Interpretation	3
or AGRI 491	Data Analysis and Interpretation	
Select one of the following:		3
AGRO 320	Crop Physiology	
ANSC 345	Principles of Animal Nutrition Required for Animal Science Concentration.	
AGEC 360	Agricultural Economics	
AGMC 326	Precision Agriculture	
AGRO 350	Soils	3
AGRI 397	Agriculture Career Planning	1
AGRI 398	Seminar	1
AGRI 494	Contemporary Agricultural Issues	3
Production Courses -select one of the following lecture/lab combinations		**3**
ANSC 442 & ANSC 443	Beef Production and Beef Production Laboratory	
~~**Animal Science Courses**~~		
ANSC 330 & ANSC 331	Horse Production and Horse Production Laboratory	
ANSC 431 & ANSC 432	Dairy Production and Dairy Production Laboratory	
Required Animal Science Electives		

ANSC 240	Livestock Management	2
ANSC 241	Livestock Management Laboratory	1
ANSC 347	Animal Pathology	3
ANSC 458	Animal Growth and Meat Quality	3
Select 1 of the following combinations		**3**
ANSC 437	Physiology of Reproduction in Domestic Animals	
ANSC 438	Physiology of Reproduction in Domestic Animal Laboratory	
ANSC 446	Animal Breeding	
ANSC 447	Animal Breeding Laboratory	
ANSC 439	Equine Reproduction and Breeding	
Select 6 credit hours from the following:		**6**
ANSC 340	Meats and Meat Products	
~~ANSC 344~~	~~Course ANSC 344 Not Found~~	
ANSC 338	Introductory Livestock Evaluation and Selection	
ANSC 448	Animal Feeds and Feeding Practices	
ANSC 130	Introduction to Horse Science	
ANSC 131	Horse Science Lab	
ANSC 232	Basic Equitation	
ANSC 321	Comparative Anatomy	
ANSC 333	Horse Training	
ANSC 334	Horse Training Laboratory	
ANSC 336	Conformation and Performance Evaluation of Horses	
ANSC 342	Advanced Riding Maneuvers and Collection	
ANSC 350	Equine Career Opportunities	
ANSC 360	Equine Events Management	
AGRO 420	Forage Crops	
AGRO 421	Forage Crops Laboratory	
ANSC 440	Advanced Livestock Evaluation and Selection	
ANSC 475	Selected Topics in Agriculture	
Students must take Animal Science Laboratory		
ANSC 141	Introduction to Animal Science Laboratory (ANSC students must take ANSC 141)	1
Total Hours		51

Dairy Science Concentration

Basic Agriculture Courses		
AGRO 110	Introduction to Plant Science	3
ANSC 140	Introduction to Animal Science	3
AGEC 160	Introduction to Agribusiness and Agricultural Entrepreneurship	3
AGMC 170 & AGMC 171	Introduction to Agricultural Mechanization and Introduction to Agricultural Mechanization Laboratory	3
AGRI 175	University Experience – Agriculture	1
AGMC 176	Course AGMC 176 Not Found	
AGRI 291	Introduction to Data Analysis and Interpretation	3
or AGRI 491	Data Analysis and Interpretation	
Select one of the following:		3
AGRO 320	Crop Physiology	
ANSC 345	Principles of Animal Nutrition	
AGEC 360	Agricultural Economics	
AGMC 326	Precision Agriculture	
AGRO 350	Soils	3
AGRI 397	Agriculture Career Planning	1
AGRI 398	Seminar	1
AGRI 494	Contemporary Agricultural Issues	3
Dairy Science Courses		
ANSC 141	Introduction to Animal Science Laboratory	1
ANSC 240	Livestock Management	2
ANSC 241	Livestock Management Laboratory	1
ANSC 431	Dairy Production	2
ANSC 432	Dairy Production Laboratory	1
ANSC 437	Physiology of Reproduction in Domestic Animals	2
ANSC 438	Physiology of Reproduction in Domestic Animal Laboratory	1
ANSC 448	Animal Feeds and Feeding Practices	4
AGRO 420	Forage Crops	2
AGRO 421	Forage Crops Laboratory	1
Electives		

Take 6 credit hours from the following choices		6
ANSC 347	Animal Pathology	
ANSC 446	Animal Breeding	
ANSC 447	Animal Breeding Laboratory	
ANSC 458	Animal Growth and Meat Quality	
ANSC 475	Selected Topics in Agriculture	
ANSC 338	Introductory Livestock Evaluation and Selection	
~~ANSC 340~~	~~Meats and Meat Products~~	~~3~~
~~ANSC 344~~	~~Course ANSC 344 Not Found~~	
ANSC 440	Advanced Livestock Evaluation and Selection	
Total Hours		50

General Agriculture Concentration

Basic Agriculture Courses		
AGRO 110	Introduction to Plant Science	3
ANSC 140	Introduction to Animal Science	3
AGEC 160	Introduction to Agribusiness and Agricultural Entrepreneurship	3
AGMC 170 & AGMC 171	Introduction to Agricultural Mechanization and Introduction to Agricultural Mechanization Laboratory	3
AGRI 175	University Experience – Agriculture	1
AGMC 176	Course AGMC 176 Not Found	
AGRI 291	Introduction to Data Analysis and Interpretation	3
or AGRI 491	Data Analysis and Interpretation	
Select one of the following:		3
AGRO 320	Crop Physiology	
ANSC 345	Principles of Animal Nutrition	
AGEC 360	Agricultural Economics	
AGMC 326	Precision Agriculture	
AGRO 350	Soils	3
AGRI 397	Agriculture Career Planning	1
AGRI 398	Seminar	1
AGRI 494	Contemporary Agricultural Issues	3
Agriculture Courses		

Select 7 hours of 300-400 level electives from any AGEC, AGED, AGMC, AGRI, AGRO, ANSC, or HORT courses	7
Select 12 hours of other AGEC, AGED, AGMC, AGRI, AGRO, ANSC, HORT electives; at least 6 hrs must be 300-400 level [1]	12
Total Hours	46

[1] Students may pursue a minor in lieu of the 12 hours of Agriculture electives.

Horticulture Concentration

Basic Agriculture Courses		
AGRO 110	Introduction to Plant Science	3
ANSC 140	Introduction to Animal Science	3
AGEC 160	Introduction to Agribusiness and Agricultural Entrepreneurship	3
AGMC 170 & AGMC 171	Introduction to Agricultural Mechanization and Introduction to Agricultural Mechanization Laboratory	3
AGRI 175	University Experience – Agriculture	1
AGMC 176	Course AGMC 176 Not Found	
AGRI 291	Introduction to Data Analysis and Interpretation	3
or AGRI 491	Data Analysis and Interpretation	
Select one of the following:		3
AGRO 320	Crop Physiology	
ANSC 345	Principles of Animal Nutrition	
AGEC 360	Agricultural Economics	
AGMC 326	Precision Agriculture	
AGRO 350	Soils	3
AGRI 397	Agriculture Career Planning	1
AGRI 398	Seminar	1
AGRI 494	Contemporary Agricultural Issues	3
Horticulture Courses		
HORT 301	Introduction to Landscape Plants	2
HORT 302	Introduction to Landscape Plants Laboratory	1
HORT 313	Turfgrass Management	3
HORT 316	Greenhouse Maintenance and Operation	2
HORT 317	Greenhouse Maintenance and Operation Laboratory	1
HORT 407	Plant Propagation	2

HORT 408	Plant Propagation Laboratory	1
AGRO 111	Plant Science Laboratory	1
AGRO 351	Soils Laboratory	1
Electives		
~~Any HORT, AGRO, AGEC, or AGRI courses~~		~~5~~
Select 6 credit hours from the following courses:		6
HORT 340	Greenhouse Crop Production	
HORT 304	Landscape Maintenance	
HORT 305	Landscape Maintenance Laboratory	
HORT 403	Landscape Design and Construction	
HORT 404	Landscape Design and Construction Laboratory	
HORT 312	Introduction to Horticulture	
HORT 419	Fruit, Vegetable, and Vineyard Production	
HORT 475	Selected Topics in Agriculture	
HORT 209	Floral Design	
AGRI 369	Cooperative Education in Agriculture II	
Total Hours		47

Horse Science Concentration

Basic Agriculture Courses		
AGRO 110	Introduction to Plant Science	3
ANSC 140	Introduction to Animal Science	3
AGEC 160	Introduction to Agribusiness and Agricultural Entrepreneurship	3
AGMC 170 & AGMC 171	Introduction to Agricultural Mechanization and Introduction to Agricultural Mechanization Laboratory	3
AGRI 175	University Experience – Agriculture	1
AGMC 176	Course AGMC 176 Not Found	
AGRI 291	Introduction to Data Analysis and Interpretation	3
or AGRI 491	Data Analysis and Interpretation	
Select one of the following:		3
AGRO 320	Crop Physiology	
ANSC 345	Principles of Animal Nutrition Required for Horse Science concentration.	
AGEC 360	Agricultural Economics	

AGMC 326	Precision Agriculture	
AGRO 350	Soils	3
AGRI 397	Agriculture Career Planning	1
AGRI 398	Seminar	1
AGRI 494	Contemporary Agricultural Issues	3
Horse Science Courses - Take the following courses		
ANSC 141	Introduction to Animal Science Laboratory	1
ANSC 330	Horse Production	2
ANSC 331	Horse Production Laboratory	1
ANSC 130	Introduction to Horse Science	2
ANSC 131	Horse Science Lab	1
ANSC 439	Equine Reproduction and Breeding	3
Select 10 credit hours from the following:		10
ANSC 232	Basic Equitation	
ANSC 333	Horse Training	
ANSC 334	Horse Training Laboratory	
ANSC 336	Conformation and Performance Evaluation of Horses	
ANSC 342	Advanced Riding Maneuvers and Collection	
ANSC 350	Equine Career Opportunities	
ANSC 360	Equine Events Management	
ANSC 448	Animal Feeds and Feeding Practices	
ANSC 475	Selected Topics in Agriculture	
ANSC 240	Livestock Management	
ANSC 241	Livestock Management Laboratory	
ANSC 347	Animal Pathology	
ANSC 440	Advanced Livestock Evaluation and Selection	
ANSC 338	Introductory Livestock Evaluation and Selection	
~~ANSC 340~~	~~Meats and Meat Products~~	~~3~~
~~ANSC 344~~	~~Course ANSC 344 Not Found~~	
ANSC 437	Physiology of Reproduction in Domestic Animals	
ANSC 438	Physiology of Reproduction in Domestic Animal Laboratory	
~~ANSC 446~~	~~Animal Breeding~~	~~2~~
~~ANSC 447~~	~~Animal Breeding Laboratory~~	~~1~~

AGRO 420	Forage Crops	
AGRO 421	Forage Crops Laboratory	
Total Hours		47

Turf and Golf Course Management

Basic Agriculture Courses		
AGRO 110	Introduction to Plant Science	3
ANSC 140	Introduction to Animal Science	3
AGEC 160	Introduction to Agribusiness and Agricultural Entrepreneurship	3
AGMC 170 & AGMC 171	Introduction to Agricultural Mechanization and Introduction to Agricultural Mechanization Laboratory	3
AGRI 175	University Experience – Agriculture	1
AGMC 176	Course AGMC 176 Not Found	2
AGRI 291	Introduction to Data Analysis and Interpretation	3
or AGRI 491	Data Analysis and Interpretation	
Select one of the following:		3
AGRO 320	Crop Physiology	
ANSC 345	Principles of Animal Nutrition	
AGEC 360	Agricultural Economics	
AGMC 326	Precision Agriculture	
AGRO 350	Soils	3
AGRI 397	Agriculture Career Planning	1
AGRI 398	Seminar	1
AGRI 494	Contemporary Agricultural Issues	3
Turf and Golf Course Management Courses		
HORT 313	Turfgrass Management	3
AGMC 272	Turf Equipment Management and Operation	2
AGMC 273	Turf Equipment Management and Operation Laboratory	1
AGMC 392	Turf Irrigation	2
AGMC 393	Turf Irrigation Laboratory	1
AGRI 369	Cooperative Education in Agriculture II	3
Select 9 hours from the following:		9
HORT 301	Introduction to Landscape Plants	

HORT 302	Introduction to Landscape Plants Laboratory
HORT 304	Landscape Maintenance
HORT 305	Landscape Maintenance Laboratory
HORT 340	Greenhouse Crop Production
HORT 407	Plant Propagation
HORT 408	Plant Propagation Laboratory
HORT 475	Selected Topics in Agriculture
~~AGEC 260~~	~~Course AGEC 260 Not Found~~
~~AGMC 172~~	~~Course AGMC 172 Not Found~~
~~AGMC 173~~	~~Course AGMC 173 Not Found~~
AGMC 270	Turf Mowing Equipment Maintenance
AGMC 271	Turf Mowing Equipment Maintenance Laboratory
AGMC 371	Agricultural Mechanics
AGMC 372	Agricultural Mechanics Laboratory
AGRO 310	Pest Management
AGRO 351	Soils Laboratory
AGRO 352	Soil Fertility and Fertilizers
AGRO 409	Weed Science
AGRO 410	Weed Science Laboratory
AGRO 418	Plant Pathology
Total Hours	50

4-Year Plan

Finish in Four Plans

Agribusiness

First Year

Fall	Hours	Spring	Hours
AGEC 160	3	AGMC 170 & AGMC 171	3
AGMC 176	2	ANSC 140	3
AGRI 175	1	CHEM 107 & CHEM 108	4
CHEM 105 & CHEM 106	4	~~Colonnade - Arts & Humanities~~	~~3~~
ENG 100	3	COMM 145	3
MATH 115	3	~~AGRI 108~~	~~3~~

First Year

Fall	Hours	Spring	Hours
		~~AGRO 110~~	~~3~~
		HIST 101 or HIST 102	3
	16		16

Second Year

Fall	Hours	Spring	Hours
AGEC 261	3	AGRI 291	3
AGRO 110	3	~~HIST 101 or HIST 102~~	~~3~~
BIOL 120 & BIOL 121	4	~~MGT 210~~	~~3~~
~~ECON 202~~	~~3~~	~~MKT 220~~	~~3~~
Colonnade - Arts & Humanities	3	AGRO 350	3
ENG 200	3	General Elective - Upper Division	1
~~AGMC 170 & AGMC 171~~	~~3~~	Colonnade - Social & Behavioral Sciences	3
		Colonnade - Social & Cultural	3
		World Language Requirement or General Elective	3
	16		16

Third Year

Fall	Hours	Spring	Hours
AGEC 360	3	~~AGEC 468 (or other AGEC Elective)~~	~~3~~
AGRI 397	1	~~ANSC 140~~	~~3~~
Agriculture Upper Division Elective	3	AGEC 361	3
Colonnade - Local to Global	3	AGEC 366	3
ENG 300	3	Agriculture Upper-Division Elective	3
~~AGRO 350~~	~~3~~	Colonnade - Systems	3
General Elective	3	General Elective	3
	16		15

Fourth Year

Fall	Hours	Spring	Hours
AGEC 362	3	~~AGRI 398~~	~~1~~
~~AGEC 460 (or other AGEC Elective)~~	~~3~~	AGEC 463	3
~~AGRI 494~~	~~3~~	AGRI 494	3
~~AGRI 397~~	~~1~~	General Elective - Upper Division	3
AGRI 398	1	General Elective	3
General Elective - Upper Division	3	~~Agriculture Upper-Division Elective~~	~~3~~
General Elective - Upper Division	3	~~Agriculture Upper-Division Elective~~	~~1~~
General Elective	3		
	13		12

Total Hours 120

Agriculture Systems

First Year

Fall	Hours	Spring	Hours
ENG 100	3	COMM 145	3

First Year

Fall	Hours	Spring	Hours
MATH 115	3	AGEC 160	3
CHEM 105 & CHEM 106	4	ANSC 140	3
AGMC 170 & AGMC 171	3	CHEM 107 & CHEM 108	4
AGRI 175	1	HIST 101 or HIST 102	3
AGMC 176	2		
	16		16

Second Year

Fall	Hours	Spring	Hours
ENG 200	3	AGRI 291	3
AGRO 110	3	AGMC 326	3
BIOL 120 & BIOL 121	4	Colonnade - Social & Behavioral Science	3
~~AGMC 172 & AGMC 173~~	~~3~~	Colonnade - Arts & Humanities	3
AGRO 350 & AGRO 351	4	World Language Requirement, if needed, or General Elective	3
AG ELECTIVE	3		
	17		15

Third Year

Fall	Hours	Spring	Hours
MFGE 227	3	AGRI 398	1
AGMC 425	3	AGEC 366	3
ENG 300	3	AGMC 377 & AGMC 378	3
Colonnade - Social & Cultural	3	AGRI 397	1
Agriculture Elective	3	Agriculture Elective	3
		Agriculture Elective	3
	15		14

Fourth Year

Fall	Hours	Spring	Hours
AGRI 369	1-4	AGRI 494	3
Agriculture Elective	3	AGMC 373 & AGMC 374	3
Agriculture Elective	3	Agriculture Elective	3
Agriculture Elective	3	Colonnade - Systems	3
Colonnade - Local to Global	3		
	15		12

Total Hours 120

Agricultural Education

First Year

Fall	Hours	Spring	Hours
ENG 100	3	ENG 200	3

First Year

Fall	Hours	Spring	Hours
Colonnade - Arts & Humanities	3	AGED 250	3
ANSC 140	3	AGRO 110	3
AGRI 175	1	COMM 145	3
AGED 200	1	AGMC 170 & AGMC 171	3
Colonnade - Social & Behavioral	3		
AGMC 176	2		
	16		15

Second Year

Fall	Hours	Spring	Hours
MATH 115 (or higher)	3	AGED 300	3
AGRI 398	1	AGED 489	1-3
EDU 260	3	AGEC 160	3
HORT 316 & HORT 317	3	CHEM 107 & CHEM 108	4
CHEM 105 & CHEM 106	4	AGRO 320, ANSC 345, AGEC 360, or AGMC 326	3
World Language Requirement, if needed, or General Elective	3		
	17		16

Third Year

Fall	Hours	Spring	Hours
HIST 101 or HIST 102	3	Agriculture Elective	3
PSY 310	3	SPED 330	3
AGRI 291	3	AGRO 350	3
ENG 300	3	EDU 360	3
BIOL 120 & BIOL 121	4	AGED 471	3
EDU 350	3	Colonnade - Social & Cultural	3
	19		18

Fourth Year

Fall	Hours	Spring	Hours
AGED 470	3	EDU 489	2-3
Colonnade - Systems	3	SEC 490	5-10
AGMC 371 & AGMC 372	3		
AGRI 397	1		
AGRI 494	3		
Colonnade - Local to Global	3		
	16		13

Total Hours 130

Agronomy - Plant Science

First Year

Fall	Hours	Spring	Hours
ENG 100	3	COMM 145	3
MATH 115	3	CHEM 107 & CHEM 108	4
CHEM 105 & CHEM 106	4	AGEC 160	3
AGRO 110 & AGRO 111	4	ANSC 140	3
AGRI 175	1	HIST 101 or HIST 102	3
AGMC 176	2		
	17		16

Second Year

Fall	Hours	Spring	Hours
ENG 200	3	World Language Requirement or General Elective	3
AGMC 170 & AGMC 171	3	AGRO 310	3
BIOL 120 & BIOL 121	4	AGRI 291	3
Colonnade - Social & Behavioral Sciences	3	AGRO 320	3
AGRO 350 & AGRO 351	4	AGRI 397	1
		Colonnade - Arts & Humanities	3
	17		16

Third Year

Fall	Hours	Spring	Hours
ENG 300	3	Agriculture upper-division Elective	3
~~Colonnade - Social & Cultural~~	~~3~~	~~AGRI 398~~	~~1~~
~~AGMC 326~~	~~3~~	~~AGRO 422~~	~~3~~
AGRO 352	3	~~AGRO 452~~	~~3~~
AGRONOMY ELECTIVE	3	Agriculture upper-division Elective	3
AGRO 409 & AGRO 410	3	AGRONOMY ELECTIVE	3
AGRO 422	3	COLONNADE - SOCIAL & CULTURAL	3
	15		12

Fourth Year

Fall	Hours	Spring	Hours
Colonnade - Local to Global	3	AGRI 494	3
~~AGRO 418~~	~~3~~	~~AGRI 355~~	~~3~~
AGRI 369	2	Agriculture upper-division Elective	3
~~AGRI 369~~	~~3~~	AGRONOMY ELECTIVE	3
~~AGRI 493~~	~~3~~	Colonnade - Systems	3
AGRONOMY ELECTIVE	3	AGRI 398	1
AGRONOMY ELECTIVE	3		
AGRONOMY ELECTIVE	3		
	14		13

First Year

Fall	Hours	Spring	Hours

Total Hours 120

Agronomy - Soil Science

First Year

Fall	Hours	Spring	Hours
ENG 100	3	COMM 145	3
CHEM 105 & CHEM 106	4	AGRI 108	3
AGRO 110	3	CHEM 107 & CHEM 108	4
AGRI 175	1	MATH 115	3
AGMC 170 & AGMC 171	3	AGMC 176	
	14		13

Second Year

Fall	Hours	Spring	Hours
ENG 200	3	ANSC 140	3
BIOL 120 & BIOL 121	4	AGRI 291	3
Colonnade - Social & Behavioral Sciences	3	AGRO 320	3
Colonnade - Arts & Humanities	3	AGRI 397	1
AGRO 350 & AGRO 351	4	HIST 101 or HIST 102	3
		World Language Requirement or General Elective	3
	17		16

Third Year

Fall	Hours	Spring	Hours
ENG 300	3	AGRI 398	1
AGRO 352	3	AGRO 454	3
AGRO 459	3	Agronomy Plant Elective	3
AGEC 160	3	Colonnade - Local to Global	3
Agronomy Plant Elective	3	Agriculture upper-division Elective	3
		COLONNADE - SOCIAL AND CULTURAL	3
	15		16

Fourth Year

Fall	Hours	Spring	Hours
AGRO 457 & AGRO 458	3	AGRI 494	3
Colonnade - Systems	3	AGRO 452	3
Agriculture Elective	3	Agriculture Elective	3
Agriculture Elective	3	Agriculture Elective	3
Agriculture Elective	3	AGRICULTURE ELECTIVE	2
	15		14

Total Hours 120

Animal Science

First Year

Fall	Hours	Spring	Hours
ENG 100	3	COMM 145	3
MATH 115	3	AGRI 108	3
CHEM 105 & CHEM 106	4	AGRO 110	3
ANSC 140 & ANSC 141	4	CHEM 107 & CHEM 108	4
AGRI 175	1	AGMC 176	2
	15		15

Second Year

Fall	Hours	Spring	Hours
ENG 200	3	World Language Requirement or General Elective	3
AGMC 170 & AGMC 171	3	AGRI or ANSC Elective	3
ANSC 240 & ANSC 241	3	AGRI 291	3
BIOL 120 & BIOL 121	4	Colonnade - Arts & Humanities	3
Colonnade - Social & Behavioral Sciences	3	ENG 300	3
	16		15

Third Year

Fall	Hours	Spring	Hours
HIST 101 or HIST 102	3	AGRI 398	1
AGRO 350	3	ANSC 446 & ANSC 447 (or ANSC 437/438 or ANSC 439)	3
ANSC 345	3	AGEC 160	3
~~ANSC 340 (or ANSC Production Course or ANSC Elective)~~	~~3~~	Colonnade - Social & Cultural	3
AGRI or ANSC Elective	3	Colonnade - Local to Global	3
ANSC 347	3	ANSC Elective	3
	15		16

Fourth Year

Fall	Hours	Spring	Hours
AGRI 397	1	AGRI 494	3
~~ANSC 437~~	~~2~~	~~ANSC 446 & ANSC 447 (or ANSC Production Course or ANSC Elective)~~	~~3~~
~~ANSC 340 (or ANSC Production Course or ANSC Elective)~~	~~3~~	~~ANSC 448~~	~~4~~
Colonnade - Systems	3	Animal Science Elective	3
ANSC ELECTIVE	3	ANSC ELECTIVE	3
ANSC ELECTIVE	3	ANSC 458	3

First Year

Fall	Hours	Spring	Hours
AGRI or ANSC Elective	3	Animal Science Elective	3
	13		15

Total Hours 120

General Agriculture

First Year

Fall	Hours	Spring	Hours
ENG 100	3	COMM 145	3
MATH 115	3	AGRI 108	3
ANSC 140	3	AGRO 110	3
CHEM 105 & CHEM 106	4	CHEM 107 & CHEM 108	4
AGRI 175	1	Colonnade - Arts & Humanities	3
AGMC 176	2		
	16		16

Second Year

Fall	Hours	Spring	Hours
ENG 200	3	World Language Requirement or General Elective	3
AGEC 160	3	AGRI 291	3
BIOL 120 & BIOL 121	4	HIST 101 or HIST 102	3
Colonnade - Social & Behavioral	3	ENG 300	3
		AGRO 320, ANSC 345, AGEC 360, or AGMC 326	3
	13		15

Third Year

Fall	Hours	Spring	Hours
Colonnade - Social & Cultural	3	AGRI 397	1
AGRO 350	3	ANSC Elective	3
AGMC 170 & AGMC 171	3	AGRO or HORT Elective	3
Animal Sciences Elective	3	AGEC Elective	3
Agriculture Elective	3	Agriculture Elective	3
		AGMC Elective	3
	15		16

Fourth Year

Fall	Hours	Spring	Hours
AGRI 398	1	AGRI 494	3
AGEC Elective	3	AGRO or HORT Elective	3
Agriculture Elective	3	Agriculture Elective	3
Agriculture Elective	3	Agriculture Elective	3
Agriculture Elective	1	Colonnade - Systems	3
Colonnade - Local to Global	3		
	14		15

First Year

Fall	Hours	Spring	Hours

Total Hours 120

Horticulture

First Year

Fall	Hours	Spring	Hours
AGRO 110 & AGRO 111	4	COMM 145	3
MATH 115	3	ANSC 140	3
Colonnade - Arts & Humanities	3	AGMC 170 & AGMC 171	3
ENG 100	3	CHEM 105 & CHEM 106	4
AGRI 175	1	World Language Requirement or General Elective	3
AGMC 176	2		
	16		16

Second Year

Fall	Hours	Spring	Hours
CHEM 107 & CHEM 108	4	AGRO 320	3
BIOL 122 & BIOL 123	4	AGRO 350 & AGRO 351	4
HORT 301 & HORT 302	3	Horticulture Elective	3
HIST 101 or HIST 102	3	ENG 200	3
Colonnade - Social & Behavioral	3		
	17		13

Third Year

Fall	Hours	Spring	Hours
HORT 316 & HORT 317	3	AGEC 160	3
HORT 313	3	Colonnade - Social & Cultural	3
Horticulture Elective	3	Horticulture Elective	3
Agriculture Elective	3	AGRI 108	3
ENG 300	3	~~AGRI 369~~	~~2~~
		HORT ELECTIVE	2
	15		14

Fourth Year

Fall	Hours	Spring	Hours
AGRI 397	1	AGRI 398	1
AGRI 491 or AGRI 291	3	~~BIOL 348~~	~~4~~
AGRI 494	3	HORT 407 & HORT 408	3
Horticulture Elective	3	HORT ELECTIVE	3
Horticulture Elective	3	Horticulture Elective	3

First Year

Fall	Hours	Spring	Hours
Colonnade - Local to Global	3	Colonnade - Systems	3
	16		13

Total Hours 120

Horse Science

First Year

Fall	Hours	Spring	Hours
ENG 100	3	COMM 145	3
MATH 115	3	~~AGRI 108~~	~~3~~
CHEM 105	4	AGRO 110	3
& CHEM 106			
~~ANSC 140~~	~~4~~	ANSC 140	3
~~& ANSC 141~~			
AGRI 175	1	ANSC 141	1
ANSC 130	2	CHEM 107	4
		& CHEM 108	
ANSC 131	1	AGMC 176	2
	14		16

Second Year

Fall	Hours	Spring	Hours
ENG 200	3	World Language Requirement or General Elective	3
AGMC 170	3	~~ANSC 130~~	~~3~~
& AGMC 171		~~& ANSC 131~~	
~~ANSC 240~~	~~3~~	AGRI 291	3
~~& ANSC 241~~			
BIOL 120	4	Colonnade - Arts & Humanities	3
& BIOL 121			
ANSC ELECTIVE	3	ENG 300	3
Colonnade - Social & Behavioral	3	ANSC 331	1
		ANSC 330	2
	16		15

Third Year

Fall	Hours	Spring	Hours
HIST 101 or HIST 102	3	AGRI 398	1
AGRO 350	3	~~ANSC 344~~	~~3~~
~~ANSC 330~~	~~3~~	AGEC 160	3
~~& ANSC 331~~			
ANSC 345	3	~~ANSC 333~~	~~3~~
		~~& ANSC 334~~	
ANSC 232	2	ANSC ELECTIVE	3
AGRI 369	1	Colonnade - Social & Cultural	3
ANSC ELECTIVE	3	ANSC 439	3
		Colonnade - Local to Global	3
	15		16

First Year

Fall	Hours	Spring	Hours
Fourth Year			
Fall	Hours	Spring	Hours
AGRI 397	1	AGRI 494	3
~~ANSC 437~~ & ~~ANSC 438~~	~~3~~	~~ANSC 446~~ & ~~ANSC 447~~	~~3~~
Animal/Equine Science Elective	3	~~ANSC 448~~	~~4~~
Colonnade - Systems	3	Animal/Equine Science Elective	3
AGRI 369	2	ANSC ELECTIVE	3
ANSC ELECTIVE	3	ANSC ELECTIVE	3
		AGRI 369	1
		Animal/Equine Science Elective	3
	12		16

Total Hours 120

Turf and Golf Course Management

First Year

Fall	Hours	Spring	Hours
ENG 100	3	COMM 145	3
MATH 115	3	AGMC 176	2
CHEM 105 & CHEM 106	4	AGMC 170 & AGMC 171	3
AGRO 110	3	CHEM 107 & CHEM 108	4
AGRI 175	1	Colonnade: Arts & Humanities	3
	14		15

Second Year

Fall	Hours	Spring	Hours
ENG 200	3	World Language (if needed) or General Elective	3
ANSC 140	3	AGRI 291	3
BIOL 120 & BIOL 121	4	AGRO 320	3
Colonnade - Social & Behavioral	3	HIST 101 or HIST 102	3
HORT 313	3	ENG 300	3
	16		15

Third Year

Fall	Hours	Spring	Hours
Connections - Social and Cultural	3	AGRI 397	1
AGRO 350 & AGRO 351	4	AGMC 270 & AGMC 271	3
AGEC 160	3	AGMC 272 & AGMC 273	3
Connections - Local to Global	3	Elective Course (AGRI, HORT, AGEC, AGRO)	3
AGEC 260	3	HORT 301 & HORT 302	3
	16		13

First Year

Fall	Hours	Spring	Hours
Fourth Year			
Fall	Hours	Spring	Hours
AGRI 398	1	AGRI 494	3
AGMC 392 & AGMC 393	3	Elective Course (AGRI, HORT, AGEC, AGRO)	3
Elective Course (AGRI, HORT, AGEC, AGRO)	3	Elective Course (AGRI, HORT, AGEC, AGRO)	3
Elective Course (AGRI, HORT, AGEC, AGRO)	3	Elective Course (AGRI, HORT, AGEC, AGRO)	3
AGRI 369	3	Elective Course (AGRI, HORT, AGEC, AGRO)	3
Connections - Systems	3		
	16		15

Total Hours 120

Will this program be managed or owned by more than one department?

No

Does this program include courses from outside your department?

Yes

Outside Courses
Details

Who approved including these courses?	When were they approved?
Unknown since they were approved long ago	Unknown

Please insert one Learning Outcome per box. Click green plus sign for additional LO boxes

Learning Outcomes
and Measurement
Plan

	List all student learning outcomes of the program.	Measurement Plan
SLO 1	Students will demonstrate the ability to assimilate, analyze, and effectively communicate agricultural research data.	Assess student oral presentation skills. A standardized rubric is utilized by faculty to evaluate content knowledge, mechanics and delivery, quality of visuals and organization and clarity.
SLO 2	Students will demonstrate the ability to effectively interpret issues pertinent to the agriculture discipline.	Assess student learning related to pertinent agricultural issues that generate debate among industry, consumers and advocacy groups. Analysis of essay-format exams (3 per semester) via a standardized rubric.
SLO 3	Students will demonstrate proficiency in agriculture career preparation.	Assess student performance on a mock job interview via a standardized rubric. Mock interviews are facilitated by Advising and Career Development Center personnel. Proficiency in

	List all student learning outcomes of the program.	Measurement Plan
		resume and cover letter development is also assessed.

Assessment Template: https://www.wku.edu/academicaffairs/ee/assurance_learning_resources.php

Upload Assessment Plan

Delivery Mode

Is 25% or more of this program offered at a location other than main campus?

No

Enter Location(s) and Percentage of Program Offered at Location(s)

Is 50% or more of this program offered by distance education (online asynchronous, online synchronous, connected classrooms, etc.)?

No

Do you plan to offer 100% of this program online?

No

If no, enter the percentage of the program that will be taught online.

0

Do you plan to offer 100% of this program face-to-face?

Yes

Do you plan to offer at least 25% of this program as a direct assessment competency-based educational program?

No

See the SACSCOC Policy on Direct Assessment Competency-based Educational Programs.
https://www.sacscoc.org/pdf/081705/DirectAssessmentCompetencyBased.pdf

Library Resources

Attach library resources

Rationale for the program proposal?

Changes to electives: To increase flexibility for students in developing a course plan to meet their career goals.

Additional Attachments

Additional information or attachments

Reviewer Comments

Key: 343

Course Change Request

Date Submitted: 02/20/24 11:07 am

Viewing: GEOG 350 : Sustainable Economic Development ~~Geography~~

Last revision: 02/23/24 12:28 pm

Changes proposed by: amy83008

Catalog Pages referencing this course

Department of Earth, Environmental, and Atmospheric Sciences
Department of Earth, Environmental, and Atmospheric Sciences

In Workflow

1. **GEO Approval**
2. **SC Dean**
3. **SC Curriculum Committee**
4. Undergraduate Curriculum Committee
5. University Senate
6. Provost
7. Course Inventory

Approval Path

1. 02/23/24 12:28 pm Leslie North (leslie.north): Approved for GEO Approval
2. 03/01/24 9:01 am Stuart Burris (stuart.burris): Approved for SC Dean

Proposed Action

Active

Contact(s)

Name	E-mail	Phone
Amy Nemon	amy.nemon@wku.edu	270-745-3082

Review Type	Full Review		
Term for implementation	Fall 2024		
Academic Level	Undergraduate		
Course prefix (subject area)	GEOG - Geography	Course number	350
Department	Geography & Geology		
College	Science and Engineering		

Course title
Sustainable Economic Development ~~Geography~~

Abbreviated course title: SUSTAINABLE ECONOMIC DEVELOP ~~GEOGRAPHY~~

Course description
This course will examine ~~examines~~ the modern role of sustainability methodologies ~~functional interrelationships among economic activities~~ and models to ~~areas in~~ the functional interrelationships among economic ~~consumption, production,~~ and business activities in consumption, production, marketing ~~exchange of goods~~ and exchange of goods and services. Students may engage in sustainable economic research and field experiences during the course with an emphasis on innovation through sustainability.

Credit hours: 3

Repeatable
Yes
Number of repeats: 2
For maximum credits: 3

Default grade type: Standard Letter
Alternate grade type(s):

Is this course intended to span more than one term?

No

Schedule type
Lecture

CIP Code: 450701 - Geography.

Does this course have prerequisites

No

Corequisites

Equivalent Courses

Restrictions:

College restriction? No

Field of study restriction/major? No

Classification restriction? No

Departmental Restrictions

Reason for changing the course

The course revisions to the original GEOG 350 (Economic Geography) will better support the major in the Environmental, Sustainability, and Geography Studies (ESGS) major, especially for our students with a specific interest in sustainability. Students who complete this course will be better positioned to be more competitive in the sustainability job market. This course will also be an important element in our planned certificate in Sustainability within the ESGS major.

Is this related to other courses at WKU?

No

What departments/programs have been consulted concerning potential impact (e.g. to possible duplication or conflict, changed corequisite or prerequisite for equivalent courses, etc.)? Please provide names and dates for individuals consulted.

na

Is this course part of a program that leads to teacher certificate? No

Are you seeking Colonnade approval for this course? No

Student Learning Outcomes

#	Student Learning Outcomes
1	Students will demonstrate a broad understanding of sustainability in economic and business practices and methodologies.
2	Students will analyze the risks and opportunities of sustainable economics at the local and global scales.
3	Students will evaluate the current trends in economics and through Life Cycle Analysis understand how to maneuver these trends to sustainable practices.
4	Students will apply critical thinking to current issues in sustainability economics.

Content outline

#	Topic
1	Introduction to sustainability Sustainability and its applications to economics, business, and marketing trends Bottom Line to the Triple Bottom Line Systems Thinking in economics and business Life Cycle Analysis (Cradle to Grave) application of goods and services Analysis of consumerism, at the local and global scales, and the impact on equity and the environment Sustainable Supply Chains Sustainable economics and business challenges & opportunities Professional opportunities in sustainable economics & business Creating a Sustainable Business Plan Transforming professions to sustainable professions

Student expectations and requirements

Tentative texts and course materials

Special equipment, materials, or library resources needed

Additional information

Supporting documentation

Reviewer Comments

Key: 4041

Course Change Request

Date Submitted: 02/18/24 12:24 pm

Viewing: GEOG 481 : Sustainable Tourism ~~Geography~~

Last revision: 02/18/24 12:24 pm

Changes proposed by: amy83008

Catalog Pages referencing this course

Department of Earth, Environmental, and Atmospheric Sciences
Geography (GEOG)

Proposed Action

Active

Contact(s)

Name	E-mail	Phone
Amy Nemon	amy.nemon@wku.edu	270-745-3082

Review Type	Full Review
Term for implementation	Fall 2023
Academic Level	Undergraduate

In Workflow

1. **GEO Approval**
2. **SC Dean**
3. **SC Curriculum Committee**
4. Undergraduate Curriculum Committee
5. University Senate
6. Provost
7. Course Inventory

Approval Path

1. 02/16/24 10:46 pm Leslie North (leslie.north): Rollback to Initiator
2. 02/23/24 12:29 pm Leslie North (leslie.north): Approved for GEO Approval
3. 03/01/24 9:02 am Stuart Burris (stuart.burris): Approved for SC Dean

Course prefix (subject area)	GEOG - Geography	Course number	481
Department	Geography & Geology		
College	Science and Engineering		

Course title

Sustainable Tourism ~~Geography~~

Abbreviated course title: SUSTAINABLE TOURISM ~~GEOGRAPHY~~

Course description

~~Examination of concepts, models, and theories in the geography oftourism.~~An applied and critical exploration of sustainable tourism with an emphasis on ~~Topics include~~ the sustainability methodologies and models that are employed by ~~evolution of patterns of tourism, economic, environmental, and socio-cultural impacts of tourism, sustainable tourism, environmental tourism, ethical tourism,~~ the tourism industry, as well as the environmental, social, and economic outcomes and consequence that are related to tourism activities. ~~politics of tourism, and critical analysis of alternative meanings of tourism sites.~~ Sustainable tourism will be examined at a variety of geographic scales and in diverse environmental and cultural contexts. Students may engage in sustainable tourism research and field experiences during the course. ~~Local, national, and international examples in both developed and develping countries are discussed.Field trips may be required.~~

Credit hours: 3

Repeatable

Yes

Number of repeats: 2

For maximum credits: 3

Default grade type: Standard Letter

Alternate grade type(s)

Is this course intended to span more than one term?

No

Schedule type

Lecture

CIP Code: 450701 - Geography.

Does this course have prerequisites

No ~~Yes~~

Corequisites

Equivalent Courses

Restrictions:

College restriction?	No
Field of study restriction/major?	No
Classification restriction?	No
Departmental Restrictions	

Reason for changing the course

The course revisions to the original GEOG 481 (Tourism Geography) will better support the major in the Environmental, Sustainability, and Geography Studies (ESGS) major, especially for our students with a specific interest in sustainability. Sustainability tourism is a growth area within Kentucky and surrounding regions, and professional career opportunities are expanding. Students who complete this course will be better positioned to be more competitive in the tourism job market. This course will also be an important element in our planned certificate in Sustainability within the ESGS major.

Is this related to other courses at WKU?

No

What departments/programs have been consulted concerning potential impact (e.g. to possible duplication or conflict, changed corequisite or prerequisite for equivalent courses, etc.)? Please provide names and dates for individuals consulted.

na

Is this course part of a program that leads to teacher certificate?	No
Are you seeking Colonnade approval for this course?	No

Student Learning Outcomes

#	Student Learning Outcomes
1	1. Students will demonstrate a broad understanding of sustainability tourism practices and methodologies.
2	2. Students will identify current tourism practices at a variety of geographic scales and in diverse environmental, economic, and social contexts.
3	3. Students will analyze sustainability tourism research and effectively communicate their findings.
4	4. Students will examine professional competencies in the application of sustainable tourism to real-world problem solving.

Content outline

#	Topic
1	Introduction to the tourism industry Sustainability and its applications to tourism Sustainable tourism practices and theory Sustainability tourism and Ecotourism Sustainable Tourism and Climate Change Sustainable tourism and economic development Sustainable tourism challenges and opportunities Creating a sustainability tourism plan Professional opportunities in sustainable tourism

Student expectations and requirements

Tentative texts and course materials

Special equipment, materials, or library resources needed

Additional information

Supporting documentation

Reviewer Comments

Leslie North (leslie.north) (02/16/24 10:46 pm): Rollback: Learning outcomes must use Bloom's action verbs.

Key: 4151

Course Change Request

Date Submitted: 03/05/24 1:37 pm

Viewing: EE 432 : Power Systems II

Last approved: 09/26/23 3:17 am

Last revision: 03/05/24 1:37 pm

Changes proposed by: mrk43933

Catalog Pages referencing this course

Electrical Engineering (EE)

School of Engineering and Applied Sciences

Proposed Action

In Workflow

1. **EAS Approval**
2. **EAS Approval**
3. **SC Dean**
4. **SC Curriculum Committee**
5. Undergraduate Curriculum Committee
6. University Senate
7. Provost
8. Course Inventory

Approval Path

1. 03/03/24 11:41 pm Shahnaz Aly (shahnaz.aly): Approved for EAS Approval
2. 03/04/24 12:55 pm Stuart Burris (stuart.burris): Approved for SC Dean
3. 03/04/24 3:48 pm Robert Fischer (robert.fischer): Approved for Provost
4. 03/04/24 4:33 pm Elizabeth Laves (beth.laves): Rollback to SC Dean for Provost
5. 03/04/24 4:37 pm Cathleen Webb (cathleen.webb): Rollback to Initiator
6. 03/05/24 9:37 am Shahnaz Aly (shahnaz.aly):

Approved for EAS Approval
7. 03/05/24 9:40 am Stuart Burris (stuart.burris): Approved for SC Dean
8. 03/05/24 9:53 am Elizabeth Laves (beth.laves): Rollback to Initiator
9. 03/05/24 1:35 pm Shahnaz Aly (shahnaz.aly): Rollback to Initiator
10. 03/05/24 1:38 pm Shahnaz Aly (shahnaz.aly): Approved for EAS Approval
11. 03/05/24 1:49 pm Shahnaz Aly (shahnaz.aly): Approved for EAS Approval
12. 03/05/24 1:51 pm Stuart Burris (stuart.burris): Approved for SC Dean

History

1. Sep 26, 2023 by Stacy Wilson (stacy.wilson)

~~Suspended~~
Active

Contact(s)

Name	E-mail	Phone
Mark Cambron ~~Stacy Wilson~~	mark.cambron@wku.edu ~~stacy.wilson@wku.edu~~	2707458868 ~~2707456394~~

Review Type Full Review ~~Expedited~~

Term for implementation	Fall 2024		
Academic Level	Undergraduate		
Course prefix (subject area)	EE - Electrical Engineering	Course number	432
Department	Engineering & Applied Sciences, School of		
College	Science and Engineering		

Course title
Power Systems II

Abbreviated course title: POWER SYSTEMS II

Course description
Analysis of power systems in the steady state. Includes the development of models and analysis procedures from major power system components and for power networks.

Credit hours: 3

Repeatable
Yes
Number of repeats: 2
For maximum credits: 3

Default grade type: Standard Letter

Alternate grade type(s)

Is this course intended to span more than one term?

No

Schedule type
Lecture

CIP Code: 141001 - Electrical and Electronics Engineering.

Does this course have prerequisites

Yes

Prerequisites

And/Or	(	Course/Test Code	Min Grade/Score	Academic Level	)	Concurrency?
		EE 431	D	UG		

Corequisites

Equivalent Courses

Restrictions:

College restriction? No

Field of study restriction/major? No

Classification restriction? No

Departmental Restrictions

Reason for changing the course

New EE faculty with power experience is interested in teaching course. Student learning outcomes and topics were in course leaf.

Is this related to other courses at WKU?

No

What departments/programs have been consulted concerning potential impact (e.g. to possible duplication or conflict, changed corequisite or prerequisite for equivalent courses, etc.)? Please provide names and dates for individuals consulted.

No students from other departments take this course.

Is this course part of a program that leads to teacher certificate? No

Are you seeking Colonnade approval for this course? No

Student Learning Outcomes

#	Student Learning Outcomes
1	Model the system by finding its bus admittance matrix given a power system with different components.

#	Student Learning Outcomes
2	Describe transmission line parameters and compute these parameters based on specified characteristics, enabling the resolution of operational problems including complex power transfer, voltage regulation, and reactive compensations.
3	Determine voltages and currents at different locations within power systems in response to various types of faults.
4	Explain the operating principles of relays.
5	Formulate swing equations and assess the transient stability of the system under different types of disturbances.

Content outline

#	Topic
~~1~~	
1	Transmission line parameters
2	Symmetrical and Unsymmetrical faults
3	Series and shunt compensation
4	Power system stability
5	Power system protection

Student expectations and requirements

Tentative texts and course materials

Special equipment, materials, or library resources needed

Additional information

Supporting documentation

Reviewer Comments

Elizabeth Laves (beth.laves) (03/04/24 4:33 pm): Rollback: Activating a course is not part of the expedited process. The Registrar is considering adding it to the expedited process and will bring it up at the next UCC

meeting. In the meantime, I am rolling this back so it can follow the full review process.

Cathleen Webb (cathleen.webb) (03/04/24 4:37 pm): Rollback: I will send the email sent to me.

Elizabeth Laves (beth.laves) (03/05/24 9:53 am): Rollback: Per email from Dr. Burris.

Shahnaz Aly (shahnaz.aly) (03/05/24 1:35 pm): Rollback: resend to reset workflow

Key: 2943

Course Change Request

Date Submitted: 03/03/24 11:51 pm

Viewing: SEAS 325 : Survey of Building Systems

Last approved: 11/16/21 3:14 am

Last revision: 03/03/24 11:51 pm

Changes proposed by: shh64934

Catalog Pages referencing this course

Architectural Sciences (AS)

School of Engineering and Applied Science (SEAS)

Proposed Action

Active

Contact(s)

In Workflow

1. **EAS Approval**
2. **SC Dean**
3. **SC Curriculum Committee**
4. Undergraduate Curriculum Committee
5. University Senate
6. Provost
7. Course Inventory

Approval Path

1. 02/13/24 11:58 am Shahnaz Aly (shahnaz.aly): Rollback to Initiator
2. 02/19/24 10:08 pm Shahnaz Aly (shahnaz.aly): Rollback to Initiator
3. 03/03/24 11:52 pm Shahnaz Aly (shahnaz.aly): Approved for EAS Approval
4. 03/04/24 12:56 pm Stuart Burris (stuart.burris): Approved for SC Dean

History

1. Nov 16, 2021 by Jason Wilson (jason.wilson)

Name	E-mail	Phone
Shahnaz Aly ~~Jason Wilson~~	shahnaz.aly@wku.edu ~~jason.wilson@wku.edu~~	2707455849 ~~2707452322~~

Review Type: Full Review ~~Expedited~~

Term for implementation: Fall 2024

Academic Level: Undergraduate

Course prefix (subject area): SEAS - Sch of Engr & App Sci

Course number: 325

Department: Engineering & Applied Sciences, School of

College: Science and Engineering

Course title
Survey of Building Systems

Abbreviated course title: SURVEY OF BUILDING SYSTEMS

Course description
A study of building systems with the associated building codes and energy conservation techniques, HVAC, Electricity, lighting, water supply, waste disposal, fire protection, and building management systems. ~~A study of National Electric Code, BOCA National Building Code, Standard Building Code, Local Building Code, structural systems, egress system, residential and commercial wiring, blueprint reading, HVAC, and energy conservation techniques.~~

Credit hours: 3

Repeatable
Yes
Number of repeats: 2
For maximum credits: 3

Default grade type: Standard Letter

Alternate grade type(s)

Is this course intended to span more than one term?

No

Schedule type
~~Lecture/Lab~~
Lecture

CIP Code: 040901 ~~150613~~ - Architectural ~~Manufacturing Engineering~~ Technology/Technician.

Does this course have prerequisites

Yes

Prerequisites

And/Or	(	Course/Test Code	Min Grade/Score	Academic Level	)	Concurrency?
		AS 163	D	UG		
And	(	CM 261	D	UG		
Or		CE 303	D	UG	)	
~~And~~	~~(~~	~~MATH 117~~	~~D~~	~~UG~~		
~~Or~~		~~MA 117C~~	~~D~~	~~UG~~	~~)~~	
And	(	MATH 117	D	UG		
Or		MATH 136	D	UG		
Or		MATH 137	D	UG	)	

Corequisites

Equivalent Courses

Restrictions:

College restriction? No

Field of study restriction/major? No

Classification restriction? No

Departmental Restrictions

Reason for changing the course

This course is a required course in ~~would allow civil engineering students to take~~ the architectural science and construction management program. ~~course without an override.~~ The current lecture-lab setup was ~~Civil Engineering students do~~ not able ~~have~~ to satisfy the needs of ~~take~~ either program hence the course is being modified to a traditional lecture course to provide students with a broad overview of building systems that is applicable to both the majors. ~~of the listed pre-requisites.~~

MATH 136 and MATH 137 are added as alternatives to MATH 117 as many students come in with Calculus and

are not required to take Trigonometry if they have calculus. ~~This would allow civil engineering students to take the course without an override.~~

Is this related to other courses at WKU?

No

What departments/programs have been consulted concerning potential impact (e.g. to possible duplication or conflict, changed corequisite or prerequisite for equivalent courses, etc.)? Please provide names and dates for individuals consulted.

NA

Is this course part of a program that leads to teacher certificate?

No

Are you seeking Colonnade approval for this course?

No

Student Learning Outcomes

#	Student Learning Outcomes
~~1~~	~~Use terminology in electrical, plumbing and HVAC to describe components that make up building systems~~
~~2~~	~~Apply the principles and components of basic electrical safety~~
~~3~~	~~Identify fundamental components of building systems~~
~~4~~	~~Recognize basic safety measures to be followed on worksites~~
1	Recognize the terminology of building systems throughout the design and construction
2	Recommend a building system for certain functions.
3	Estimate major building system components based on building size and function.
4	Layout the components of major building systems.
5	Draft major building systems in building plans.

Content outline

#	Topic
~~1~~	~~Terminology in electrical, plumbing and HVAC components~~
~~2~~	~~Basic electrical codes, principles and components~~
~~3~~	~~Components of what makes up building systems~~

#	Topic
~~4~~	~~Safety measures to be followed on the worksite~~
1	Design Process for efficient building systems.
2	Criteria, standards, codes, and guidelines of building systems.
3	Science of Light, sound, heat, and sun as major factors in building systems design.
4	Passive and active environmental control systems (HVAC systems).
5	Indoor Air Quality.
6	Electrical systems (Lighting and Power supply systems).
7	Water supply systems.
8	Liquid and solid waste disposal/recycling systems.
9	Fire Protection Systems.
10	Building conveying systems (elevators & Escalators).
11	Building Management Systems (BMS).

Student expectations and requirements

Tentative texts and course materials

Special equipment, materials, or library resources needed

NONE

Additional information

Supporting documentation

Reviewer Comments

Shahnaz Aly (shahnaz.aly) (02/13/24 11:58 am): Rollback: Changes required to course description

Shahnaz Aly (shahnaz.aly) (02/19/24 10:08 pm): Rollback: Change Math requirements

Key: 9373

Program Change Request

Date Submitted: 02/05/24 12:04 pm

Viewing: 629P, 629 : Computer Science, Bachelor of Science

Last approved: 05/10/22 9:29 am

Last edit: 02/05/24 12:04 pm

Changes proposed by: gng27220

Using this Program

Computer Science, Bachelor of Science (629P, 629)

Proposed Action

Active

Contact Person

In Workflow

1. **EAS Approval**
2. **SC Dean**
3. **SC Curriculum Committee**
4. Undergraduate Curriculum Committee
5. University Senate
6. Provost
7. Program Inventory

Approval Path

1. 02/19/24 10:07 pm Shahnaz Aly (shahnaz.aly): Approved for EAS Approval
2. 03/01/24 8:58 am Stuart Burris (stuart.burris): Approved for SC Dean

History

1. Mar 26, 2021 by Rheanna Plemons (rheanna.plemons)
2. May 26, 2021 by Rheanna Plemons (rheanna.plemons)
3. May 10, 2022 by Guangming Xing (guangming.xing)

Name	Email	Phone
Guangming Xing	guangming.xing@wku.edu	2709914538

Term of Implementation: 2024-2025

Program Reference Number: 629P, 629

Review Type: Full Review

Academic Level: Undergraduate

Program Type: Major

Degree Types: Bachelor of Science

Department: Engineering & Applied Sciences, School of

College: Science and Engineering

Program Name (eg. Biology): Computer Science, Bachelor of Science

Will this program have concentrations?
Yes

Concentrations

Concentrations

Systems/Scientific App (CSSA)
General (CGEN)

CIP Code: 11.0701 - Computer Science.

Will this program lead to teacher certification?: No

Does the proposed program contain 25% or more new content not previously taught in another course at WKU? If yes, contact the Office of the Provost for additional SACSCOC proposal requirements

No

Catalog Content

Program Overview (Catalog field: Overview tab)

Computer Science Program Educational Objectives

The program achieves its mission by focusing on specific educational objectives. Within three to five years after graduation, WKU CS graduates are expected to be:

Objective 1: Engage in continuous learning to adapt to innovation and evolving technologies;
Objective 2: Design and implement solid solutions for rapidly changing computing & information systems;
Objective 3: Be effective team participants;
Objective 4: Effectively communicate ideas in verbal and written form at the appropriate level for the audiences;
Objective 5: Be ethical and socially responsible computer science professional

The CS student outcomes are listed on the program website at https://www.wku.edu/seas/.

Curriculum Requirements (Catalog field: Program Requirements)

Admission Requirements

The major in computer science requires a minimum of 53 semester hours. To be admitted to the computer science major, students must complete CS 290 or CS 221 with grades of "C" or better. In addition, all CS courses counting toward the CS program major must be completed with a grade of "C" or better. Computer Science electives may include from 0-3 hour of 200-level courses. Students must adhere to all University Policies as indicated in the WKU catalog section, "Academic Information."

Program Requirements (53 hours)

Approved Shared Content from /shared/undergraduate-major-requirements/
Last Approved: Jul 6, 2023 12:58pm

A baccalaureate degree requires a minimum of 120 unduplicated semester hours. More information can be found at www.wku.edu/registrar/degree_certification.php.
Students who began WKU in the Fall 2014 and thereafter should review the Colonnade requirements located at: https://www.wku.edu/colonnade/colonnaderequirements.php.

Systems/Scientific Applications Concentration

Core Courses		
CS 180	Computer Science I	4
CS 290	Computer Science II	4
CS 325	Computer Organization and Architecture	3
CS 331	Data Structures	3
CS 339	Discrete Structures	3
CS 351	Database Management Systems I	3
CS 360	Software Engineering I	3
CS 382	Programming Languages	3
CS 396	Intermediate Software Project	3

CS 421	Data Structures and Algorithm Analysis	3
CS 425	Operating Systems I	3
CS 496	CS Senior Project and Professional Practice	3
STAT 301	Introductory Probability and Applied Statistics	3
Electives		
Select 12 hours from the following courses:		12
CS 270	Introduction to Web Programming	
CS 315	Introduction to Unix	
CS 371	Course CS 371 Not Found	
CS 372	Mobile App Development	
CS 381	Introduction to Computer Networks	
CS 443	Database Management Systems II	
CS 445	Operating Systems II	
CS 446	Interactive Computer Graphics	
CS 450	Computer Networks	
CS 456	Artificial Intelligence	
Total Hours		53
Additional Requirements for the Systems/Scientific Applications Concentration		
MATH 136	Calculus I	4
Math Electives		**6-7**
Choose two for the following list:		
MATH 137	Calculus II	
MATH 305	Introduction to Mathematical Modeling	
MATH 307	Introduction to Linear Algebra	
MATH 331	Differential Equations	
MATH 405	Numerical Analysis I	
MATH 406	Numerical Analysis II	
MATH 470	Introduction to Operations Research	
MATH 473	Introduction to Graph Theory	
STAT 401	Regression Analysis	
STAT 402	Experimental Design	
~~Two natural science courses (at least 6 hours; at least one course must include a lab) designed for Science/Engineering majors~~		~~6-7~~

Total Hours	10-11

General Option

Core Courses		
CS 180	Computer Science I	4
CS 290	Computer Science II	4
CS 331	Data Structures	3
CS 325	Computer Organization and Architecture	3
CS 339	Discrete Structures	3
CS 351	Database Management Systems I	3
CS 360	Software Engineering I	3
CS 382	Programming Languages	3
CS 396	Intermediate Software Project	3
CS 421	Data Structures and Algorithm Analysis	3
CS 425	Operating Systems I	3
CS 496	CS Senior Project and Professional Practice	3
STAT 301	Introductory Probability and Applied Statistics	3
Electives		
Select 12 hours CS electives including: 3 hours at the 200-level or above (excluding CS 226 and CS 257), 6 hours at the 300-level or above and another 3 hours at the 400-level or above [1]		12
Total Hours		53
Additional Requirements for the General Option:		
MATH 136	Calculus I	4
Total Hours		4

1 At most 1.5 hours of credit for CS 239 may count towards the major. At most 3 hours of credit for CS 239 and CS 245 (only for languages for which credit is not received through another course) may count towards the major.

4-Year Plan

Computer Science, General

First Year

Fall	Hours	Spring	Hours
CS 180	4	CS 290	4
ENG 100	3	MATH 136	4
Colonnade - Arts & Humanities	3	COMM 145	3
General Elective	2	General Elective	3

First Year

Fall	Hours	Spring	Hours
Colonnade - Natural & Physical Science w/ lab	4		
	16		14

Second Year

Fall	Hours	Spring	Hours
CS 331	3	CS 351	3
Colonnade - Literary Studies	3	HIST 101 or HIST 102	3
CS 2XX Elective	3	CS 339	3
General elective	3	General Elective	3
CS 325	3	STAT 301	3
	15		15

Third Year

Fall	Hours	Spring	Hours
Colonnade - Natural & Physical Science w/ no lab	3	CS 382	3
CS 360	3	CS 3XX Elective	3
CS 3XX Elective	3	Colonnade - Social & Behavioral	3
ENG 300	3	General elective	3
Colonnade - System	3	World Language Requirement or General Elective	3
	15		15

Fourth Year

Fall	Hours	Spring	Hours
CS 396	3	CS 496	3
CS 425	3	CS 4XX Elective	3
CS 421	3	Colonnade - Local to Global	3
General Elective	3	General Elective	3
Colonnade - Social & Cultural	3	General Elective	3
	15		15

Total Hours 120

Computer Science, Systems/Scientific Applications Concentration

First Year

Fall	Hours	Spring	Hours
CS 180	4	CS 290	4
ENG 100	3	MATH 136	4
HIST 101 or HIST 102	3	COMM 145	3
General Elective	3	Colonnade - Arts & Humanities	3
World Language Requirement or General Elective	3		
	16		14

Second Year

Fall	Hours	Spring	Hours
CS 331	3	CS 339	3
CS 325	3	CS 351	3
Colonnade - Literary Studies	3	Math Elective	3

First Year

Fall	Hours	Spring	Hours
Colonnade - Natural & Physical Sciences w/ lab	4	Colonnade - Natural & Physical Sciences w/ no lab	3
General elective	3	General elective	3
	16		15

Third Year

Fall	Hours	Spring	Hours
STAT 301	3	CS 382	3
CS 360	3	CS Elective (CS 372 or CS 381 or CS 446)	3
CS Elective (CS 443, CS 450, or CS 456)	3	Colonnade - Social & Behavioral	3
ENG 300	3	Math Elective	3
Colonnade - System	3	General Elective	3
	15		15

Fourth Year

Fall	Hours	Spring	Hours
CS 425	3	CS 496	3
CS 421	3	CS Elective (CS 445 or CS 446)	3
General Elective	3	Colonnade - Local to Global	3
CS Elective (CS 443 or CS 456)	3	Colonnade - Social & Cultural	3
CS 396	3	Math/Science Elective	3
	15		15

Total Hours 121

Will this program be managed or owned by more than one department?

No

Does this program include courses from outside your department?

No

Please insert one Learning Outcome per box. Click green plus sign for additional LO boxes

Learning Outcomes and Measurement Plan

	List all student learning outcomes of the program.	Measurement Plan
SLO 1	Design, implement, and evaluate a computing-based solution to meet a given set of computing requirements in the context of the program's discipline.	The students are evaluated in upper divisional courses(CS 360, CS 425 and CS 496) on the design and implementation of a solution for a given problem.
SLO 2	Communicate effectively in a variety of professional contexts.	The students are evaluated in CS 360 and CS 496 for their oral presentations. The project documentation are evaluated to assess the writing skills in CS 360 and CS 496.

	List all student learning outcomes of the program.	Measurement Plan
SLO 3	Function effectively as a member or leader of a team engaged in activities appropriate to the program's discipline.	The students will be evaluated in CS 360 and CS 496 for setting team goals, effectiveness working in a team, and creating deliverables through team efforts.

Assessment Template: https://www.wku.edu/academicaffairs/ee/assurance_learning_resources.php

Upload Assessment Plan

Delivery Mode

Is 25% or more of this program offered at a location other than main campus?

No

Enter Location(s) and Percentage of Program Offered at Location(s)

Is 50% or more of this program offered by distance education (online asynchronous, online synchronous, connected classrooms, etc.)?

No

Do you plan to offer 100% of this program online?

No

If no, enter the percentage of the program that will be taught online.

0

Do you plan to offer 100% of this program face-to-face?

Yes

Do you plan to offer at least 25% of this program as a direct assessment competency-based educational program?

No

See the SACSCOC Policy on Direct Assessment Competency-based Educational Programs.
https://www.sacscoc.org/pdf/081705/DirectAssessmentCompetencyBased.pdf

Library Resources

Attach library resources

Rationale for the program proposal?

The System/Scientific option holds accreditation from ABET CAC. The recently updated requirements have eliminated the previous constraint that science courses must be exclusively for science or engineering majors. The faculty in the CS program anticipates that this change will broaden the range of choices available to our students and enhance accessibility to the System/Scientific option.

Additional Attachments

Additional information or attachments

SEAS Approval: 10/2/2020
OCSE Approval: 10/22/2020
UCC Approval: 11/17/2020
Senate Approval: 12/3/2020
Provost Approval: 1/5/2021

Reviewer Comments

Key: 334

Program Change Request

Date Submitted: 02/12/24 3:50 pm

Viewing: ~~555P,~~ 555 : Computer Information Technology, Bachelor of Science

Last approved: 06/15/23 9:07 am

Last edit: 03/01/24 9:17 am

Changes proposed by: stc51902

Catalog Pages
Using this Program
Computer Information Technology, Bachelor of Science (555P, 555)

Proposed Action

In Workflow

1. **EAS Approval**
2. **SC Dean**
3. **SC Curriculum Committee**
4. Undergraduate Curriculum Committee
5. University Senate
6. Provost
7. Program Inventory

Approval Path

1. 02/02/24 2:01 pm Stacy Wilson (stacy.wilson): Approved for EAS Approval
2. 02/02/24 8:22 pm Stuart Burris (stuart.burris): Rollback to Initiator
3. 02/03/24 11:09 am Stacy Wilson (stacy.wilson): Approved for EAS Approval
4. 02/12/24 3:42 pm Jennifer Anderson (jennifer.anderson): Rollback to Initiator
5. 02/12/24 4:06 pm Stacy Wilson (stacy.wilson): Approved for EAS Approval
6. 03/01/24 8:57 am Stuart Burris (stuart.burris): Approved for SC Dean

History

1. May 18, 2021 by Rheanna Plemons (rheanna.plemons)
2. Apr 22, 2022 by Jessica Dorris (jessica.dorris)
3. Apr 18, 2023 by Jennifer Hammonds (jennifer.hammonds)
4. Jun 15, 2023 by Ryan Wilson (ryan.wilson)

Active

Contact Person

Name	Email	Phone
Stacy Wilson	stacy.wilson@wku.edu	2707456394

Term of Implementation	2024-2025
Program Reference Number	~~555P,~~ 555
Review Type	Full Review
Academic Level	Undergraduate
Program Type	Major
Degree Types	Bachelor of Science
Department	Engineering & Applied Sciences, School of
College	Science and Engineering
Program Name (eg. Biology)	Computer Information Technology, Bachelor of Science

Will this program have concentrations?

No

CIP Code	11.0103 - Information Technology.
Will this program lead to teacher certification?	No

Does the proposed program contain 25% or more new content not previously taught in another course at WKU? If yes, contact the Office of the Provost for additional

SACSCOC proposal requirements

No

Catalog Content

Program Overview (Catalog field: Overview tab)

Computer Information Technology (CIT) is an integral part of modern life and business. Careers in the CIT field frequently exceed median pay and future job outlook growth. The CIT program at WKU can help prepare students for many rewarding careers, including:
Computer Network Architect
Computer Programmer
Computer Support Specialist
Database Administrator
Information Security Analyst
Network and Computer Systems Administrator
Software Developer
Web Developer

Curriculum Requirements (Catalog field: Program Requirements)

Program Requirements (48 ~~60~~ hours)

Approved Shared Content from /shared/undergraduate-major-requirements/
Last Approved: Jul 6, 2023 12:58pm

A baccalaureate degree requires a minimum of 120 unduplicated semester hours. More information can be found at www.wku.edu/registrar/degree_certification.php.
Students who began WKU in the Fall 2014 and thereafter should review the Colonnade requirements located at: https://www.wku.edu/colonnade/colonnaderequirements.php.

The CIT online degree requires 120 credit hours and leads to a Bachelor of Science degree. No minor or second major is required. Enrollment in the CIT program is limited and based on student qualifications. All courses in the major must be completed with a grade of "C" or better. The program requires 30-48 ~~36-60~~ hours of upper-division CIT coursework, depending on transfer credits. All courses should be selected consistent with WKU's degree requirements including:
30 ~~36~~ hours minimum must be earned at WKU (typically satisfied by CIT course requirements below)
42 hours must be in upper-division credit (30 ~~credit (36~~ hours for students that transfer with an Associate of Applied Science degree in computer technology or related major, also satisfied by CIT course requirements below)
120 hours minimum overall
Colonnade Program Requirements
MATH 116 or higher
For **transfer students** (with an Associate of Applied Science degree or equivalent in computer technology or related major), 30 ~~36~~ hours of CIT coursework is required. These include:

Core Courses:		
CIT 300	Computer Information Technology Foundations	3
CIT 302	Web Development	3

CIT 352	Database Administration II	3
CIT 372	Telecommunications II	3
~~Select seven courses from 400-level CIT courses and/or from the following:~~		~~21~~
Select five courses from 400-level CIT courses and/or from the following (only one course may have the MFGE prefix):		15
MFGE 342	Manufacturing Operations	
SEAS 367	Supervised Work Experience in Industry	
MFGE 390	Project Management	
MFGE 394	Lean Systems	
MFGE 396	Introduction to Supply Chain Management	
MFGE 430	Technology Management / Supervision / Team Building	
SEAS 475	Selected Topics in Industry	
Capstone course:		
CIT 490	Senior Research	3
Total Hours		30

For **non-transfer students,** 60 hours of CIT coursework is required. These include:

Foundation Courses		
CIT 300	Computer Information Technology Foundations	3
CIT 302	Web Development	3
CIT 310	Systems Architecture I	3
CIT 312	Systems Architecture II	3
CIT 330	Systems Development I	3
CIT 332	Systems Development II	3
CIT 350	Database Administration I	3
CIT 352	Database Administration II	3
CIT 370	Telecommunications I	3
CIT 372	Telecommunications II	3
~~Select nine courses from 400-level CIT courses and/or from the following:~~		~~27~~
Select five courses from 400-level CIT courses and/or from the following (only one course may have the MFGE prefix):		15
MFGE 342	Manufacturing Operations	
SEAS 367	Supervised Work Experience in Industry	
MFGE 390	Project Management	
MFGE 394	Lean Systems	

MFGE 396	Introduction to Supply Chain Management	
MFGE 430	Technology Management / Supervision / Team Building	
SEAS 475	Selected Topics in Industry	
Capstone Course:		
CIT 490	Senior Research	3
Total Hours		48

4-Year Plan

Finish in Four Plan

First Year

Fall	Hours	Spring	Hours
ENG 100	3	ENG 200	3
MATH 116 or MATH 109	3	Colonnade - Natural & Physical Science w/ out lab	3
COMM 145	3	Colonnade - Arts & Humanities	3
World Language Requirement or General Elective	3	World Language Requirement or General Elective	3
IDST 175	3	HIST 101 or HIST 102	3
	15		15

Second Year

Fall	Hours	Spring	Hours
ENG 300	3	Colonnade - Natural & Physical Science w/ lab	3
Colonnade - Social & Behavioral	3	CIT 300	3
General or Minor Elective	3	CIT 302	3
General or Minor Elective	3	Colonnade - Systems	3
General or Minor Elective	3	General or Minor Elective	3
	15		15

Third Year

Fall	Hours	Spring	Hours
Colonnade - Social & Cultural	3	Colonnade - Local to Global	3
CIT 350	3	CIT 352	3
CIT 370	3	CIT 372	3
CIT 310	3	CIT 312	3
CIT 330	3	CIT 332	3
	15		15

Fourth Year

Fall	Hours	Spring	Hours
CIT 4XX Elective	3	CIT 490	3
CIT 4XX Elective	3	CIT 4XX Elective	3
CIT 4XX Elective	3	CIT 4XX Elective	3
General or Minor Elective	3	General or Minor Elective	3
General or Minor Elective	3	General or Minor Elective	3
	15		15

Total Hours 120

Will this program be managed or owned by more than one department?

No

Does this program include courses from outside your department?

Please insert one Learning Outcome per box. Click green plus sign for additional LO boxes

Learning Outcomes and Measurement Plan

	List all student learning outcomes of the program.	Measurement Plan
SLO 1	Demonstrate mastery of computer database concepts	Artifacts collected in CIT 300 and CIT 490
SLO 2	Demonstrate mastery of computer network concepts	Artifacts collected in CIT 300 and CIT 490
SLO 3	Demonstrate mastery of computer hardware concepts	Artifacts collected in CIT 300 and CIT 490
SLO 4	Demonstrate mastery of computer security concepts	Artifacts collected in CIT 300 and CIT 490
SLO 5	Demonstrate mastery of technology management concepts	Artifacts collected in CIT 300 and CIT 490
SLO 6	Demonstrate mastery of computer programming concepts	Artifacts collected in CIT 300 and CIT 490

Assessment Template: https://www.wku.edu/academicaffairs/ee/assurance_learning_resources.php

Upload Assessment Plan

Delivery Mode

Is 25% or more of this program offered at a location other than main campus?

No

Enter Location(s) and Percentage of Program Offered at Location(s)

Is 50% or more of this program offered by distance education (online asynchronous, online synchronous, connected classrooms, etc.)?

Yes

Do you plan to offer 100% of this program online?

Yes

Do you plan to offer 100% of this program face-to-face?

No

If no, enter the percentage of the program that is taught face-to-face

0

Do you plan to offer at least 25% of this program as a direct assessment competency-based educational program?

No

See the SACSCOC Policy on Direct Assessment Competency-based Educational Programs.
https://www.sacscoc.org/pdf/081705/DirectAssessmentCompetencyBased.pdf

Library Resources

Attach library resources

Rationale for the program proposal?

It was recently determined that this program requires significantly more hours than is required in the major. In order to streamline the program and manage resources effective, the number of hours is being decreased.

The pre-major is being removed because it now irrelevant based on other program changes.

Additional Attachments

Additional information or attachments

Revised by Registrar 4/22/22. MFGE 394 updated to SEAS 394 and MFGE 430 updated to SEAS 430 effective 202230.

Revised by Registrar 6/15/23. SEAS updated to MFGE.

Reviewer Comments

Stuart Burris (stuart.burris) (02/02/24 8:22 pm): Rollback: Rolled back by request
Jennifer Anderson (jennifer.anderson) (02/12/24 3:42 pm): Rollback: CIT program will remove the p-code.

Key: 263

Program Change Request

Date Submitted: 02/08/24 4:54 pm

Viewing: 537P, 537 : Electrical Engineering, Bachelor of Science

Last approved: 04/12/23 3:46 pm

Last edit: 02/08/24 4:54 pm

Changes proposed by: mrk43933

Catalog Pages
Using this Program
Electrical Engineering, Bachelor of Science (537P, 537)

Proposed Action

Active

Contact Person

In Workflow

1. **EAS Approval**
2. **SC Dean**
3. **SC Curriculum Committee**
4. Undergraduate Curriculum Committee
5. University Senate
6. Provost
7. Program Inventory

Approval Path

1. 02/19/24 10:07 pm Shahnaz Aly (shahnaz.aly): Approved for EAS Approval
2. 03/01/24 8:58 am Stuart Burris (stuart.burris): Approved for SC Dean

History

1. May 26, 2021 by Rheanna Plemons (rheanna.plemons)
2. Aug 25, 2021 by Jessica Dorris (jessica.dorris)
3. Sep 27, 2021 by Jennifer Hammonds (jennifer.hammonds)
4. Apr 12, 2023 by Jennifer Hammonds (jennifer.hammonds)

Name	Email	Phone
Mark Cambron	mark.cambron@wku.edu	2707458868

Term of Implementation: 2024-2025

Program Reference Number: 537P, 537

Review Type: Full Review

Academic Level: Undergraduate

Program Type: Major

Degree Types: Bachelor of Science

Department: Engineering & Applied Sciences, School of

College: Science and Engineering

Program Name (eg. Biology): Electrical Engineering, Bachelor of Science

Will this program have concentrations?
No

CIP Code: 14.1001 - Electrical and Electronics Engineering.

Will this program lead to teacher certification?: No

Does the proposed program contain 25% or more new content not previously taught in another course at WKU? If yes, contact the Office of the Provost for additional SACSCOC proposal requirements

Catalog Content

Program Overview (Catalog field: Overview tab)

Electrical engineering touches virtually every aspect of life in the twenty-first century. Electrical engineers are experts in dealing with electricity, electromagnetism, and electronics. Electrical engineers are employed in a variety of industries including:
Circuits and Electronics
Communication and Signal Processing
Electrical Power Systems
Computer Hardware and Embedded Systems
Robotics, Control Systems and Automation
Biomedical Applications
Automotive and Aerospace Systems
Manufacturing plants
The mission of our Electrical Engineering Program at WKU is to build a foundation of knowledge in electrical engineering by integrating a variety of project experiences at every level throughout the curriculum. Our program is to be relevant to our region and to produce graduates who can immediately contribute to the profitability of their employer. Our electrical engineering curriculum exposes students to a variety of topics to prepare them for careers as engineers.
The WKU Electrical Engineering program is accredited by the Engineering Accreditation Commission of ABET, http://www.abet.org.

Electrical Engineering Program Educational Objectives

The program achieves its mission by focusing on specific educational objectives. A few years after graduation, WKU EE graduates are expected to be:
Objective 1: Pursuing successful and productive careers;
Objective 2: Applying their engineering education to address real-world problems;
Objective 3: Continuing their professional development and engaging in lifelong learning; and
Objective 4: Emerging as leaders in their companies, professions, and communities.
For detailed information on the electrical engineering program, please see http://wku.edu/seas and/or contact your advisor.

Curriculum Requirements (Catalog field: Program Requirements)

Academic Standards for the Electrical Engineering Program

Students are admitted as a pre-major in Electrical Engineering. In order to transition from the pre-major to major and to graduate with a degree in Electrical Engineering, students must complete the following courses earning a grade of “C” or better in each course.

EE 210	Circuits & Networks I	3.5
~~ENG 100~~	~~Introduction to College Writing~~	~~3~~
MATH 136	Calculus I (F-QR)	4
MATH 137	Calculus II	4
PHYS 255	University Physics I (E-NS)	4
PHYS 265	University Physics II (E-NS Lab)	4
Human Communication (F-OC)		3
College Composition (F-WC)		3

For detailed information on the electrical engineering program, please see http://wku.edu/seas and/or contact your advisor.

Program Requirements (55 ~~(58~~ hours)

Approved Shared Content from /shared/undergraduate-major-requirements/
Last Approved: Jul 6, 2023 12:58pm

A baccalaureate degree requires a minimum of 120 unduplicated semester hours. More information can be found at www.wku.edu/registrar/degree_certification.php.
Students who began WKU in the Fall 2014 and thereafter should review the Colonnade requirements located at: https://www.wku.edu/colonnade/colonnaderequirements.php.

Courses Required for Major

Program Courses		
EE 101	Electrical Engineering Design I	1
EE 180	Digital Circuits	3
EE 200	Electrical Engineering Design II	2
EE 210	Circuits & Networks I	3.5
EE 211	Circuits & Networks II	3.5
EE 300	Electrical Engineering Design III	1
EE 345	Electronics	4
EE 380	Microprocessors	4
ENGR 490	Senior Project 1	2
ENGR 491	Senior Project II	3
EE 420	Signals and Linear Systems	3
EE 431	Introduction to Power Systems	3.5
EE 460	Continuous Control Systems	3.5
EE 473	Electromagnetics I	3
or PHYS 440	Electricity and Magnetism I	
Select 12 hours of the following Tech Electives I:		12
EE 405	Course EE 405 Not Found	
EE 410	Computer Design	
EE 411	Computer Design Lab	
EE 432	Course EE 432 Not Found	
EE 436	Electric Machines and Drives	
EE 443	Microfabrication and MEMS	
EE 445	Advanced Electronics	

EE 447	Analog IC Design	
EE 448	Analog IC Design Laboratory	
EE 450	Digital Signal Processing	
EE 451	Digital Signal Processing Lab	
EE 461	Discrete Control Systems	
EE 462	Course EE 462 Not Found	
EE 470	Communications and Modulation	
EE 475	Communication Systems Lab	
EE 477	Numerical Techniques in Electromagnetics	
EE 479	Optoelectronics	
EE 480	Embedded Systems	
EE 490	Introduction to Robotics	
~~Select six hours of the following engineering/science electives:~~		~~6~~
EE 499	EE Special Topics	
CS 315	Introduction to Unix	
CS 360	Software Engineering I	
ENGR 360	System Dynamics and Modeling	
PHYS 318	Data Acquisition Using Labview	
PHYS 445	Electromagnetism II	
Select three hours of the following Tech Electives II:		3
CS 339	Discrete Structures	
EM 222	Statics	
or PHYS 350	Classical Mechanics I	
EM 303	Mechanics of Deformable Solids	
ENGR 400	Principles of Systems Engineering	
MATH 305	Introduction to Mathematical Modeling	
MATH 310	Introduction to Discrete Mathematics	
ME 220	Engineering Thermodynamics I	
or PHYS 330	Thermodynamics	
ME 240	Materials and Methods of Manufacturing	
ME 330	Fluid Mechanics	
or CE 342	Fluid Thermal Science	
MFGE 343	Automated Systems	

PHYS 316	Computational Physics	
PHYS 450	Classical Mechanics II	
Total Hours		55

Additional Courses

CS 180	Computer Science I	4
CS 290	Computer Science II	4
ECON 202	Principles of Economics (Micro)	3
or ECON 203	Principles of Economics (Macro)	
MATH 237	Multivariable Calculus	4
MATH 331	Differential Equations	3
PHYS 256	University Physics I Lab	1
~~CS 239~~	~~Problem Solving with Computational Techniques~~	~~3~~
STAT 301	Introductory Probability and Applied Statistics	3
Select one of the following 3-hour math electives:		3
MATH 307	Introduction to Linear Algebra	
MATH 350	Course MATH 350 Not Found	
MATH 370	Applied Techniques in Mathematics	
Select one of the following Chemistry Courses		3
CHEM 116	Introduction to College Chemistry	
CHEM 120	College Chemistry I	
~~BIOL 120~~	~~Biological Concepts: Cells Metabolism and Genetics~~	
~~BIOL 122~~	~~Biological Concepts: Evolution, Diversity, and Ecology~~	
~~BIOL 131~~	~~Human Anatomy and Physiology~~	
~~ENV 280~~	~~Introduction to Environmental Science~~	
~~GEOL 111~~	~~The Earth~~	
~~METR 121~~	~~Meteorology~~	
Total Hours		28

4-Year Plan

Finish in Four Plan

First Year

Fall	Hours	Spring	Hours
EE 180	3	EE 101	1
MATH 136 (F-QR)	4	MATH 137	4
~~ENG 100~~	~~3~~	PHYS 255 (E-NS)	4

First Year

Fall	Hours	Spring	Hours
~~CHEM 116, CHEM 120, BIOL 120, ENV 280, GEOL 111, BIOL 122, BIOL 131, or METR 121~~	~~3~~	PHYS 256 (E-NS Lab)	1
CS 180	4	~~COMM 145~~	~~3~~
College Composition (F-WC)	3	~~ENG 200~~	~~3~~
		CS 290	4
	14		14

Second Year

Fall	Hours	Spring	Hours
EE 200	2	EE 211	3.5
EE 210	3.5	EE 380	4
MATH 237	4	MATH 331	3
PHYS 265	4	CHEM 116 or CHEM 120 (E-NS)	3
~~CS 239~~	~~3~~	ECON 202 or ECON 203 (E-SB)	3
Human Comm (F-OC)	3	~~ENG 300~~	~~3~~
	16.5		16.5

Third Year

Fall	Hours	Spring	Hours
EE 345	4	EE 300	1
EE 420	3	EE 431	3.5
~~HIST 101 or HIST 102~~	~~3~~	Tech Elective I	3
EE 473	3	Writing in the Disciplines (F-WC)	3
MATH 307 or MATH 370 OR MATH 350	3	STAT 301	3
Literary Studies (F-AH)	3	Arts & Humanities Elec (E-AH)	3
	16		16.5

Fourth Year

Fall	Hours	Spring	Hours
ENGR 490	2	ENGR 491	3
EE 460	3.5	Tech Elective I	3
Tech Elective I	3	Tech Elective I	3
Tech Elective II	3	Connections - Systems	3
Connections - Local to Global	3	World History (F-SB)	3
Connections - Systems	3		
	17.5		15

Total Hours 126

Will this program be managed or owned by more than one department?

No

Does this program include courses from outside your department?

Please insert one Learning Outcome per box. Click green plus sign for additional LO boxes

Learning Outcomes
and Measurement
Plan

	List all student learning outcomes of the program.	Measurement Plan
SLO 1	ABET EAC Outcome #1: Upon graduation our students have the ability to identify, formulate, and solve complex engineering problems by applying principles of engineering, science, and mathematics.	Material is collected and assessed from specific classes using a rubric. A senior exit survey is conducted to ask student to rate their perception of attainment of outcome.
SLO 2	ABET EAC Outcome #2: Upon graduation, our students have the ability to apply engineering design to produce solutions that meet specified needs with consideration of public health, safety, and welfare, as well as global, cultural, social, environmental, and economic factors.	Material is collected and assessed from specific classes using a rubric. A senior exit survey is conducted to ask student to rate their perception of attainment of outcome.
SLO 3	ABET EAC Outcome #3: Upon graduation, our students have the ability to communicate effectively with a range of audiences.	Material is collected and assessed from specific classes using a rubric. A senior exit survey is conducted to ask student to rate their perception of attainment of outcome.
SLO 4	ABET EAC Outcome #4: Upon graduation, our students have the ability to recognize ethical and professional responsibilities in engineering situations and make informed judgments, which must consider the impact of engineering solutions in global, economic, environmental, and societal contexts.	Material is collected and assessed from specific classes using a rubric. A senior exit survey is conducted to ask student to rate their perception of attainment of outcome.
SLO 5	ABET EAC Outcome #5: Upon graduation, our students have the ability to function effectively on a team whose members together provide leadership, create a collaborative and inclusive environment, establish goals, plan tasks, and meet objectives.	Material is collected and assessed from specific classes using a rubric. A senior exit survey is conducted to ask student to rate their perception of attainment of outcome.
SLO 6	ABET EAC Outcome #7: Upon graduation, our students have the ability to acquire and apply new knowledge as needed, using appropriate learning strategies.	Material is collected and assessed from specific classes using a rubric. A senior exit survey is conducted to ask student to rate their perception of attainment of outcome.

Assessment Template: https://www.wku.edu/academicaffairs/ee/assurance_learning_resources.php

Upload Assessment Plan

Delivery Mode

Is 25% or more of this program offered at a location other than main campus?

No

Enter Location(s) and Percentage of Program Offered at Location(s)

Is 50% or more of this program offered by distance education (online asynchronous, online synchronous, connected classrooms, etc.)?

No

Do you plan to offer 100% of this program online?

No

If no, enter the percentage of the program that will be taught online.

0

Do you plan to offer 100% of this program face-to-face?

Yes

Do you plan to offer at least 25% of this program as a direct assessment competency-based educational program?

No

See the SACSCOC Policy on Direct Assessment Competency-based Educational Programs.
https://www.sacscoc.org/pdf/081705/DirectAssessmentCompetencyBased.pdf

Library Resources

Attach library resources

Rationale for the program proposal?

Academic Standards
• Replace ENG 100 with College Composition (WC).
This will allow for transfers to more easily satisfy the requirement.

Additional Courses
• Replace CS 239 with CS 180.
• Add CS 290 as a required course.
The EE program believes that our students need to have more experience with structured programming. CS 239 was a course taught only for the EE program. Students must complete CS 180 in order to take CS 290. The EE faculty believe that Computer Science I (CS 180) and Computer Science II (CS 290) will benefit EE students.

Tech Electives I
• Rename category from EE Electives to Tech Electives I since several of the options are not EE courses.
• Add EE 447, EE 448, EE 499
• Decouple EE 410/411, EE 450/451, and EE 470/475
• Add CS 315, CS 360, PHYS 318, PHYS 445
All additions are to increase the options for EE students in taking the 12 hours of Tech Elective I. Additions of 2 CS courses will help EE students interested in earning a minor in CS (or double major). Several EE courses have been included that have been added to the program since the last curricular update. In addition, we have decoupled the lab courses from lecture course. The students must pass 12 hours of Tech Elective I. In the previous version the labs were linked in order to count towards the required 12 hours. The linking was never the intention of the EE Program.

Tech Electives II
• Rename category from ENGR/Sci Electives to Tech Elective II
• Reduce the number of hours from 6 to 3
• Add EM 303, MATH 310, MFGE 343, and CS 339 to list
• Move PHYS 318 to Tech Elective List
CS 290 was added to the list of required courses. In order to keep the number of hours similar to the previous curriculum we want to reduce the number in this category from 6 to 3. The EE faculty believe PHYS 318 should be on the Tech Elective I list. We also added EM 303, MATH 310, MFGE 343 and CS 239 to increase flexibility.

Additional Attachments

Additional information or attachments

Reviewer Comments

Key: 266