MEMORANDUM TO: Ogden College of Science and Engineering Curriculum Committee

Ms. Robin Ayers	Dr. Andy Mienaltowski
Dr. Nahid Gani	Dr. Les Pesterfield
Dr. Scott Grubbs	Dr. Todd Willian
Dr. Ting-Hui Lee	Mr. Jason Wilson
Dr. Jeremy Maddox	

FROM: Dr. Stuart Burris, Chair

SUBJECT: Agenda for <u>Thursday, December 2nd at 4:00 p.m.</u>

A. OLD BUSINESS:
   I.   Consideration of the minutes of the November 4, 2021 meeting.

B. NEW BUSINESS:

Type of item	Description of Item & Contact Information
Informational	The following items were sent through the expedited process: **Proposal to Delete a Course:** AGEC 365, AGEC 482, AGMC 390, AGMC 391, AGRI 450, AGRO 311, and HORT 412 **Proposal to Suspend a Course:** HORT 426 **Proposal to Revise Prereq/Corequisites:** ANSC 330, ANSC 333, and ANSC 428
Consent	**Proposal to Revise Prereq/Corequisites** CE 160, Principles of Surveying, 3 hrs. Contact: Jason Wilson, Jason.wilson@wku.edu, x2322
Consent	**Proposal to Revise Prereq/Corequisites** CE 303: Construction Management, 3 hrs. Contact: Jason Wilson, Jason.wilson@wku.edu, x2322
Consent	**Proposal to Revise Prereq/Corequisites** CS 396, Intermediate Software Project, 3 hrs. Contact: Guangming Xing, Guangming.xing@wku.edu, x8848
Consent	**Proposal to Revise Prereq/Corequisites** MFGE 217, Industrial Materials, 3 hrs. Contact: Bryan Reaka, bryan.reaka@wku.edu, x7032
Action	**Proposal to Create a New Course** ANSC 439, Equine Reproduction and Breeding, 3 hrs. Contact: Paige Smith, paige.smith@wku.edu 615-946-1576
Action	**Proposal to Create a New Course** ANSC 458, Animal Growth and Meat Quality, 3 hrs. Contact: Luiz Silva, luiz.silva@wku.edu, x5957
Action	**Proposal to Create a New Course** PSYS 415: Programming for Social Sciences, 3 hrs. Contact: Lance Hahn, lance.hahn@wku.edu, x3918

Action	**Proposal to Make Multiple Revisions to a Course** MFGE 310: Safety and Ergonomics, 3 hrs. Contact: Bryan Reaka, bryan.reaka@wku.edu, x7032
Action	**Proposal to Make Multiple Revisions to a Course** MFGE 490B, Senior Research for Technology Management, 3 hrs, Contact: Bryan Reaka, bryan.reaka@wku.edu, x7032
Action	**Proposal to Revise a Program** Ref. 629P/629, Major in Computer Science, 53 hrs. Contact: Guangming Xing, Guangming.xing@wku.edu, x8848

C. **OTHER BUSINESS**

Minutes – OCSE Curriculum Committee   **November 2021**

Members Present:
Dr. Nahid Gani
Dr. Scott Grubbs
Dr. Ting-Hui Lee
Dr. Jeremy Maddox
Dr. Andy Mienaltowski
Dr. Todd Willian
Mr. Jason Wilson

Guest: Dr. Fred DeGraves

FROM: Dr. Stuart Burris, Chair

The meeting was called to order at 4:02pm.

OLD BUSINESS:
Minutes from September & October meeting required no corrections and were approved as posted.

NEW BUSINESS:

<u>**Action Agenda**</u>
Mienaltowski/Maddox motioned to approve the Proposal to Create a New Course: ANSC 458. Maddox/Grubbs motioned to table the proposal. All voted in favor in tabling the proposal.

Willian/Grubbs motioned to approve the Proposal to Revise a Program: Ref. 623, Major in Chemistry. Motion passed.

Wilson/Willian motioned to approve the Proposal to Create a New Course: PSYS 365. Motion passed.

<u>**Other Business:**</u>
Notes on Learning Outcomes (& verbs/wording used in those) were discussed briefly
Question was raised on how to change Learning Outcomes now that they are codified in CourseLeaf.
        Answer: Full Review is required for changes to Learning Outcomes
        Details for both Full and Expedited review attached and will be linked from OCSE CC webpage

Course Change Request

Date Submitted: 11/05/21 3:30 pm

Viewing: **CE 160 : Principles of Surveying**

Last revision: 11/05/21 3:30 pm

Changes proposed by: jsn97026

Catalog Pages
referencing this
course
  Civil Engineering (CE)
  Ogden College of Science and Engineering

In Workflow

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

Proposed Action

Approval Path

1. 11/05/21 3:18 pm Mark Cambron (mark.cambron): Rollback to Initiator
2. 11/05/21 3:34 pm Mark Cambron (mark.cambron): Approved for EAS Approval
3. 11/29/21 9:29 am Stuart Burris (stuart.burris): Approved for SC Dean

Active

Contact(s)

Name	E-mail	Phone
Jason Wilson	jason.wilson@wku.edu	2707452322

Review Type   **Full Review**

Term for   Fall 2022
implementation

Academic Level   Undergraduate

Course prefix (subject area)	CE - Civil Engineering			Course number	160

Department	Engineering & Applied Sciences, School of

College	Science and Engineering

Course title
Principles of Surveying

Abbreviated course title	PRINCIPLES OF SURVEYING

Course description

A study of the basic principles of surveying. Topics include: field note-taking, taping distances, differential leveling, profile leveling,angular measurements, bearings & azimuths, EDM, traversing, topographic mapping, and construction stakeout. The use and care of surveying equipment includes: automatic levels, theodolites, pocket transits, total stations and data collectors. Note:High School Algebra & Trigonometry is 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	140801 - Civil Engineering, General.

Does this course have prerequisites

Yes No

Prerequisites

And/Or	(	Course/Test Code	Min Grade/Score	Academic Level	)	Concurrency?
	(	MATH 117	D	UG		
Or		MATH 118	D	UG		

And/Or	(	Course/Test Code	Min Grade/Score	Academic Level	)	Concurrency?
Or		MATH 119	D	UG		Yes
Or		MATH 127	D	UG		
Or		MATH 136	D	UG		Yes
Or		MATH 137	D	UG		Yes
Or		MATH 205	D	UG	)	

Corequisites
  CE 161 - Principles of Surveying Lab

Equivalent Courses

Restrictions:

College restriction?   No

Field of study restriction/major?   No

Classification restriction?   No

Departmental Restrictions

Reason for changing the course
  Currently this course has a pre-requisite of high school math course. With no way to check this, we feel it is appropriate to require a pre-requisite of trigonometry. This course utilizes the real world application of trigonometry.

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.

Are you seeking Colonnade approval   No

for this course?

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

Learning outcomes

#	Learning outcomes
1	Perform trigonometric calculations for surveying problems.
2	Perform standard steel taping corrections for sag, temperature, etc.
3	Perform leveling calculations and corrections.
4	Identify typical errors of angle and leveling measurements.
5	Conduct traverse closure analysis using the Compass Method
6	Demonstrate basic circular curve notations, formulae, and calculations.

Content outline

#	Topic
1	Units of measurement
2	Field notetaking & sketching
3	Theory of errors in observations
4	Measuring distances (pacing, taping, use of total stations)
5	Leveling (theory, methods, equipment, field procedures, and calculations)
6	Measuring angles, azimuths, and bearings
7	Traversing
8	Measuring areas and volumes
9	Contour and topographic mapping
10	Horizontal curves and alignments

Student expectations and requirements

Tentative texts and course materials

Special equipment,
materials, or library
resources needed
NONE

Additional
information

Supporting
documentation

Reviewer Comments

Mark Cambron (mark.cambron) (11/05/21 3:18 pm): Rollback: Remove Note: High School Algebra &
Trigonometry is required. Add higher math to avoid paperwork

Key: 1490

Course Change Request

Date Submitted: 11/02/21 10:43 am

Viewing: **CE 303 : Construction Management**

Last revision: 11/29/21 9:30 am

Changes proposed by: jsn97026

Catalog Pages
referencing this
course
   Civil Engineering (CE)
   Construction Management (CM)

Proposed Action

Active

Contact(s)

Name	E-mail	Phone
Jason Wilson	**jason.wilson@wku.edu**	**2707452322**

Review Type	**Full Review**
Term for implementation	Fall 2022
Academic Level	Undergraduate
Course prefix (subject area)	CE - Civil Engineering
Department	Engineering & Applied Sciences, School of
College	Science and Engineering

Course number   303

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. 11/05/21 3:21 pm Mark Cambron (mark.cambron): Approved for EAS Approval
2. 11/29/21 9:30 am Stuart Burris (stuart.burris): Approved for SC Dean

Course title
  Construction Management

Abbreviated course   CONSTRUCTION MANAGEMENT
title

Course description
  The study of planning, administration, and management of construction projects and an introduction to the
  methodology utilized in executing specific designs. Emphasis is placed on the organization of construction firms,
  development of construction documents, theory of estimating and quantity take-offs, contractual and
  management systems, scheduling, project administration and inspection of construction operations.

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   140801 - Civil Engineering, General.

Does this course have prerequisites

  Yes

Prerequisites

And/Or	(	Course/Test Code	Min Grade/Score	Academic Level	)	Concurrency?
	(	MATH 117	D	UG		**Yes**
Or		MATH 118	D	UG		**Yes**
Or		MATH 119	D	UG		Yes
Or		MATH 121	D	UG		**Yes**
Or		MATH 127	D	UG		**Yes**
Or		MATH 136	D	UG		**Yes**

And/Or	(	Course/Test Code	Min Grade/Score	Academic Level	)	Concurrency?
Or		MATH 137	D	UG		**Yes**
Or		MATH 142	D	UG		**Yes**
Or		MATH 183	D	UG		**Yes**
Or		MATH 205	D	UG		**Yes**
Or		MATH 206	D	UG		**Yes**
Or		MATH 225	D	UG		**Yes**
Or		MATH 302	D	UG		**Yes**
Or		MATH 237	D	UG		**Yes**
Or		MATH 240	D	UG		**Yes**
Or		MATH 275	D	UG		**Yes**
Or		MATH 295	D	UG	)	**Yes**

Corequisites

Equivalent Courses

Restrictions:

College restriction?	No
Field of study restriction/major?	No
Classification restriction?	Yes

Select:
  Exclude

Classification:

Classification restriction
~~Academy Junior~~
~~Academy Senior~~
~~Freshman~~
Academy Junior
Academy Senior
Freshman

Departmental
Restrictions

Reason for changing
the course

**Changing pre-requisites to co-requisites with reduce conflicts with subsequent courses and allow
students to progress throughout CE, CM, and AS programs more efficiently.**

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

Are you seeking   No
Colonnade approval
for this course?

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

Learning outcomes

#	Learning outcomes
1	**Define and understand the terminology and function of the major contracting systems and management structure that they will encounter within the construction industry at every level.**
2	**Interpret and differentiate drawings and specifications commonly used by carpenters, electricians, plumbers, and various other construction trades workers.**
3	**Distinguish between various components that make up the realm of "Contract Document" and be able to contrast how these various requirements are different yet complement each other within the construction project.**

#	Learning outcomes
4	Interpret and analyze the reading of engineering and shop drawings.
5	Illustrate the importance of Daily Reports in the life of a construction project

Content outline

#	Topic
1	Major contracting systems and management structure
2	Interpret and differentiate drawings and specifications
3	Contract Documents
4	Analyze the reading of engineering and shop drawings.
5	Daily Reports

Student
expectations and
requirements

Tentative texts and
course materials

Special equipment,
materials, or library
resources needed
  NONE

Additional
information

Supporting
documentation

Reviewer Comments

Key: 1499

Course Change Request

Date Submitted: 11/01/21 7:33 pm

Viewing: **CS 396 : Intermediate Software Project**

Last revision: 11/01/21 7:33 pm

Changes proposed by: gng27220

Catalog Pages
referencing this
course
   [Computer Science (Univ) (CS)](#)
   [Department of Mathematics](#)

Proposed Action

  Active

Contact(s)

Name	E-mail	Phone
Guangming Xing	guangming.xing@wku.edu	2707458848

Review Type   **Full Review**

Term for   Fall 2022
implementation

Academic Level   Undergraduate

Course prefix   CS - Computer Science (Univ)   Course number   396
(subject area)

Department   Engineering & Applied Sciences, School of

College   Science and Engineering

Course title
  Intermediate Software Project

Abbreviated course   INTERMEDIATE SOFTWARE PROJECT
title

Course description
  The course enhances each student's abilities to craft software through the development of a significant group
  project which requires a variety of skills. Topics include simple data analysis and design, group problem solving,
  human-computer interface design, software project management, security, and quality control. The technical
  work will be complemented by written and oral technical presentations.

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

CIP Code   110101 - Computer and Information Sciences,
                     General.

Does this course have prerequisites

Yes

Prerequisites

And/Or	(	Course/Test Code	Min Grade/Score	Academic Level	)	Concurrency?
		CS 351	C	UG		
And		CS 331	C	UG		
And		COMM 145	C	UG		
And	(	ENG **300** ~~307~~	C	UG		
Or		**ENG 307**	**C**	**UG**	**)**	

Corequisites

Equivalent Courses

Restrictions:

College restriction?   No

Field of study restriction/major?   No

Classification restriction?   No

Departmental Restrictions

Reason for changing the course

CS 396 is a project-based course, which does not require significant writing. ENG 300 is a colonnade course, and the research project in Both ENG 300 and ENG 307 prepare the students well for the needed writing in CS 396.

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.

| Are you seeking Colonnade approval for this course? | No |

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

Learning outcomes

#	Learning outcomes
1	Express a real-world problem as a software development problem.
2	Design and implement software based on the analysis of a software development problem.
3	Identify an appropriate programming language to implement a given problem.
4	Enhance programming skills.
5	Design and implement functional and engaging graphical computer interfaces.
6	Design software with database connectivity.
7	Apply appropriate security measures in software development.
8	Apply software testing process into software development.
9	Apply key concepts in quality assurance, risk control, and software project management.
10	Enhance writing and presentation skills.
11	Analyze the local and global impact of computing.
12	Recognize the need for continuing professional development.

Content outline

#	Topic
1	Analysis of problems and their relations with tools/languages
2	Software project management
3	Human-computer interface design
4	Software quality control
5	Security and implications in computing
6	Data analysis
7	Game playing
8	Local and global impact of computing

Student
expectations and
requirements

Tentative texts and
course materials

Special equipment,
materials, or library
resources needed

Additional
information

Supporting
documentation

Reviewer Comments

Mark Cambron (mark.cambron) (10/29/21 5:49 pm): Rollback: Add ENG 300 or ENG 307 to pre-reqs
Stuart Burris (stuart.burris) (11/01/21 4:03 pm): Rollback: Change pre-reqs involves courses outside of SEAS
(ENG 300 & 307), so it will have to go through full review instead of expedited. It also needs some work with
regard to the wording of some of the Student Learning Outcomes. SLOs are getting more scrutiny in the
curriculum process now that they are specifically required to be listed, so I've begun checking them more
thoroughly at this point in the process. SLOs 1, 3, & 9 need attention. I'd also remove the "Be able to" from the
first three & #11, as that language is generally implied in all SLOs. I'd be glad to meet with you to discuss, or you
can utilize the attachments sent via email to select verbs that are considered more measurable/actionable. I
recommend something like the following for SLOs 1, 3, & 9. #1 Express real-world problems as software
development problems #3 Identify an appropriate programming language to implement on a given problem #9
Apply key concepts in quality assurance, risk control, and software project management

Key: 2360

Course Change Request

Date Submitted: 11/05/21 3:39 pm

Viewing: **MFGE 217 : Industrial Materials**

Last revision: 11/29/21 10:02 am

Changes proposed by: bry60656

Catalog Pages
referencing this
course
   Manufacturing Engineering Technology
   School of Engineering and Applied Sciences

In Workflow

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

Proposed Action

Approval Path

1. 10/11/21 11:05 am Mark Cambron (mark.cambron): Rollback to Initiator
2. 11/05/21 3:26 pm Mark Cambron (mark.cambron): Rollback to Initiator
3. 11/05/21 3:48 pm Mark Cambron (mark.cambron): Approved for EAS Approval
4. 11/29/21 9:32 am Stuart Burris (stuart.burris): Approved for SC Dean

Active

Contact(s)

Name	E-mail	Phone
Bryan Reaka	bryan.reaka@wku.edu	2707457032

Review Type   **Full Review**

Term for implementation	Fall 2022		
Academic Level	Undergraduate		
Course prefix (subject area)	MFGE - Manufacturing Engineering Technology	Course number	217
Department	Engineering & Applied Sciences, School of		
College	Science and Engineering		
Course title	Industrial Materials		
Abbreviated course title	INDUSTRIAL MATERIALS		

Course description
  Survey of materials concepts and their applications to the production of manufactured items. Included will be basic procedures for testing manufacturing materials and discussions of materials processing concepts and cautions.

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

CIP Code   150613 - Manufacturing Engineering Technology/Technician.

Does this course have prerequisites

  Yes

Prerequisites

And/Or	(	Course/Test Code	Min Grade/Score	Academic Level	)	Concurrency?

And/Or	(	Course/Test Code	Min Grade/Score	Academic Level	)	Concurrency?
	(	MATH 117	D	UG		
Or		MA 117C	D	UG	)	
Or		MATH 118	D	UG		
Or		MATH 119	D	UG		
Or		MATH 127	D	UG		
Or		MATH 121	D	UG		
Or		MATH 136	D	UG		
Or		MATH 137	D	UG		
Or		MATH 142	D	UG		
Or		MATH 206	D	UG		
Or		MATH 237	D	UG		
Or		MATH 240	D	UG		
Or		MATH 275	D	UG		
Or		MATH 304	D	UG		
Or		MATH 305	D	UG		
Or		MATH 306	D	UG		
Or	(	MATH 116	C	UG		
Or		MA 116C	C	UG	)	
And	(	CHEM 105	**D** ~~C~~	UG		
Or ~~And~~		CHEM 106	**D** ~~C~~	UG	)	
Or		**CHEM 109**	**D**	**UG**		
Or		**CHEM 116**	**D**	**UG**		
Or	(	CHEM 120	**D** ~~C~~	UG		
Or ~~And~~		CHEM 121	**D** ~~C~~	UG	)	

Corequisites

Equivalent Courses

Restrictions:

College restriction?   No

| Field of study restriction/major? | No |
| Classification restriction? | No |

Departmental Restrictions

Reason for changing the course

MFGE 217 has applications of chemistry. The course instructors believe some prior knowledge of chemistry beyond high school would benefit the students.. The need for information from specific course is not necessary for students to successfully matriculate through the course.Either passing the lab or the course would suffice for prerequisite knowledge for students to be able to be successful in the MFGE 217 course. Specific applications of chemistry are taught within the course when they are needed.

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

| Are you seeking Colonnade approval for this course? | No |

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

Learning outcomes

#	Learning outcomes
1	**List examples of different types of material properties**
2	**Identify and describe techniques of material testing and testing standards in specific applications**
3	**Conduct different types of materials testing, measurement, and analysis procedures for industrial applications**

#	Learning outcomes
4	Create and interpret laboratory test reports on different mechanical properties testing

Content outline

#	Topic
1	Given certain scenarios, calculate and predict behaviors of mechanical properties
2	Design mechanical structures based on materials properties, classification
3	Design mechanical structures based on properties, and application relationships.

Student
expectations and
requirements

Tentative texts and
course materials

Special equipment,
materials, or library
resources needed

Additional
information

Supporting
documentation

Reviewer Comments

Mark Cambron (mark.cambron) (10/11/21 11:05 am): Rollback: update Pre-reqs.

Mark Cambron (mark.cambron) (11/05/21 3:26 pm): Rollback: Remove {} on list of pre-reqs and the and in one place.

Key: 9323

Course Change Request

New Course Proposal

Date Submitted: 11/22/21 10:16 am

Viewing: ANSC 439 : Equine Reproduction and Breeding

Last revision: 11/22/21 10:15 am

Changes proposed by: pgm45000

Proposed Action

Active

Contact(s)

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

Term for implementation	Fall 2022		
Academic Level	Undergraduate		
Course prefix (subject area)	ANSC - Animal Science	Course number	439
Department	Agriculture		
College	Science and Engineering		
Course title			

Equine Reproduction and Breeding

Abbreviated course title   Equine repro and breeding

Course description

Reproductive anatomy and physiology of the stallion and mare as they relate to modern breeding practices. Training in semen handling, artificial insemination, and neonatal care.

Credit hours   3

Repeatable
No

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

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 330		UG	)	No
	(	ANSC 331		UG	)	No

Corequisites

Equivalent Courses

Restrictions:

College restriction?   No

Field of study   No
restriction/major?

Classification   No
restriction?

Departmental
Restrictions

Reason for
developing the
proposed course

Differences in industry standards dictate several methods of breeding. Lecture material will be supplemented
with multiple hands-on learning experiences to better prepare students for post-degree employment in the equine
breeding 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

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

Learning outcomes

#	Learning outcomes
1	Compare the stallion and mare's reproductive tract anatomy and function
2	Examine key reproductive hormones in both the mare and stallion.
3	Recognize when a mare is receptive to being bred.
4	Describe complications that may arise during the breeding, pregnancy and foaling cycle.

Content outline

#	Topic
1	Identify the stallion and mare's reproductive tract and hormones.
2	Learn different breeding methods used within different industries.
3	Follow the mares reproductive cycle and understand when she is able to conceive.
4	Understand proper semen handling skills.
5	Follow a mare throughout the beginning and end of her pregnancy.

Student
expectations and
requirements

Practical experience will be obtained through assisting Equine Faculty and Staff with herd reproductive needs such as breeding and foaling.

Tentative texts and
course materials

None

Special equipment,
materials, or library
resources needed

None

Additional
information

Supporting
documentation

Reviewer Comments

Key: 9501

Course Change Request

New Course Proposal

Date Submitted: 11/12/21 11:27 am

Viewing: ANSC 458 : Animal Growth and Meat Quality

Last revision: 11/29/21 9:28 am

Changes proposed by: lzh82661

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. 10/21/21 11:49 am
   Fred DeGraves
   (fred.degraves):
   Approved for AGRI
   Approval
2. 10/21/21 3:26 pm
   Stuart Burris
   (stuart.burris):
   Rollback to Initiator
3. 10/26/21 4:15 pm
   Fred DeGraves
   (fred.degraves):
   Approved for AGRI
   Approval
4. 10/29/21 10:39 am
   Stuart Burris
   (stuart.burris):
   Approved for SC
   Dean
5. 11/04/21 4:59 pm
   Stuart Burris
   (stuart.burris):
   Rollback to AGRI
   Approval for SC
   Curriculum
   Committee
6. 11/12/21 11:06 am

Fred DeGraves
(fred.degraves):
Rollback to Initiator
7. 11/12/21 2:50 pm
Fred DeGraves
(fred.degraves):
Approved for AGRI
Approval
8. 11/29/21 9:29 am
Stuart Burris
(stuart.burris):
Approved for SC
Dean

Active

Contact(s)

Name	E-mail	Phone
Luiz H. Pereira Silva	luiz.silva@wku.edu	2707455957

Term for
implementation   Fall 2022

Academic Level   Undergraduate

Course prefix   ANSC - Animal Science   Course number   458
(subject area)

Department   Agriculture

College   Science and Engineering

Course title
  Animal Growth and Meat Quality

Abbreviated course   Animal Growth and Meat Quality
title

Course description
  Comprehensive overview of factors affecting animal growth, carcass composition, and meat quality.

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

CIP Code   010906 - Livestock Management.

Does this course have prerequisites

  Yes

Prerequisites

And/Or	(	Course/Test Code	Min Grade/Score	Academic Level	)	Concurrency?
		ANSC 140	60	UG		No
And		BIOL 120	60	UG		No

Corequisites

Equivalent Courses

Restrictions:

College restriction?   No

Field of study restriction/major?   No

Classification restriction?   Yes

Select:
  Include

Classification:

Classification restriction
Junior
Senior

Departmental
Restrictions

Reason for
developing the
proposed course
  This course is needed because the professionals in this field should understand the factors that affect animal
  growth and meat quality. This course provides applied knowledge that can be implemented in any livestock

operation.

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

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

Learning outcomes

#	Learning outcomes
1	Describe the origin and formation of the main body tissues.
2	Explain how growth rate and carcass traits can be affected by common practices such as castration, dietary manipulation, and utilizing growth promoters.
3	Discuss the effect of carcass composition on feed efficiency and meat quality.
4	Recognize the differences in meat quality from distinct production systems, species, and breeds.

Content outline

#	Topic
1	General aspects of growth
2	Prenatal growth
3	Postnatal growth
4	Growth of body parts
5	Growth of carcass tissues
6	Hormonal control of animal growth
7	Compensatory growth
8	Animal Slaughter
9	Carcass evaluation
10	Conversion of muscle to meat

#	Topic
11	Muscle structure and fresh meat quality

Student
expectations and
requirements

Tentative texts and
course materials
  1- The Science of Animal Growth and Meat Technology. By Steven M. Lonergan, David G. Topel, Dennis N.
  Marple, 2nd edition, 2019. ISBN: 978-0-12-815277-5
  2- Growth of Farm Animals. By T.L.J. Lawrence and V.R. Fowler. 2nd edition, 2002. ISBN: 0–85199–484–9

Special equipment,
materials, or library
resources needed
  There is no special equipment, materials, or library resources needed.

Additional
information

Supporting
documentation

Reviewer Comments
  Stuart Burris (stuart.burris) (10/21/21 3:26 pm): Rollback: SLOs need editing as per separate email message
  from 10/21/2021.
  Stuart Burris (stuart.burris) (11/04/21 4:59 pm): Rollback: Proposal was tabled definitely to December meeting
  in OCSE CC to encourage consideration of adjustments to the pre-reqs, particularly including a requirement of
  junior standing.
  Fred DeGraves (fred.degraves) (11/12/21 11:06 am): Rollback: add requirement for upper level status

Key: 9475

Course Change Request

New Course Proposal

Date Submitted: 11/16/21 9:47 am

Viewing: PSYS 415 : Programming for Social Sciences

Last revision: 11/16/21 9:47 am

Changes proposed by: lnc95505

Proposed Action

Active

Contact(s)

Name	E-mail	Phone
Lance Hahn	Lance.Hahn@wku.edu	(270) 745-3918

Term for implementation	Fall 2022		
Academic Level	Undergraduate		
Course prefix (subject area)	PSYS - Psychological Sciences	Course number	415
Department	Psychological Sciences		
College	Science and Engineering		
Course title			

In Workflow

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

Approval Path

1. 11/16/21 1:28 pm Kelly Madole (kelly.madole): Approved for PSYS Approval
2. 11/29/21 9:33 am Stuart Burris (stuart.burris): Approved for SC Dean

Programming for Social Sciences

Abbreviated course   Programming for Social Science
title

Course description
  Use a programming language to approach problems faced in the social sciences. Develop programming skill to
  address issues related to experiments, analyses, and simulations within a social science context.

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   422708 - Psychometrics and Quantitative
                        Psychology.

Does this course have prerequisites

  Yes

Prerequisites

And/Or	(	Course/Test Code	Min Grade/Score	Academic Level	)	Concurrency?
	(	PSYS 210	C	UG		No
And		PSYS 211	C	UG	)	No
Or	(	PSY 210	C	UG		No
And		PSY 211	C	UG	)	No
Or		SOCL 300	C	UG		No
Or		SOCL 302	C	UG		No
Or		ECON 206	C	UG		No
Or		PS 301	C	UG		No
Or		PS 302	C	UG		No

And/Or	(	Course/Test Code	Min Grade/Score	Academic Level	)	Concurrency?
Or		PH 383	C	UG		No

Corequisites

Equivalent Courses

Restrictions:

College restriction? No

Field of study restriction/major? No

Classification restriction? No

Departmental Restrictions

Reason for developing the proposed course

In the social sciences, both practitioners and researchers benefit from using computational tools. Scientists can use these tools to conduct experiments, analyze data, and create behavioral models or simulations. Practitioners can use these tools to modify or develop treatment protocols delivered digitally, and evaluate protocol success. The proposed course will give students in the social sciences the ability to do modest computer programming and experience developing projects addressing problems within a social science context.

Is this related to other courses at WKU?
Yes

Related courses
PSYS 315 - INTRO COMPUTING AND BEHAVIOR
CS 145 - INTRO COMPUTING
PHYS 316 - Computational Physics

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.

PSYS - Wininger, 10/28/21
ECON - Lebedinsky, 10/28/21
PH - Lartey, 10/28/2
SOCL - Drummond, 10/28/21
PS - Lasley, 10/28/21
SEAS, CS - Xing, 10/29/21
IS - Blankenship, 11/2/21

How are these related?

PSYS 315 was a temporary course offered only one time. The proposed course is permanent.

PSYS 315 included several small projects and the proposed course will include a few modest and large projects after the students have acquired some programming skills.

PSYS 315 was primarily focused on acquiring the ability to program. The proposed course will be focused on both acquiring the ability to program and applying that ability to a social science context.

CS 145 introduces a general audience to computer programming but it does not focus on problems and solutions within a social sciences context. Although CS 145 is generally taken in the first two years of coursework, PSYS 415 is meant for more advanced students who have completed an undergraduate research design course and can place the skills gained in the context of social science research.

PHYS 316 teaches students how to use computers to solve physics problems, model physical systems and analyze data. This course is similar to the proposed course in that it develops programming skills focused on a specific problem space, but the proposed course is focused on the social science domain.

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

Learning outcomes

#	Learning outcomes
1	Identify how programming languages are used to support specific variable classes
2	Construct control flow and logic in an algorithm
3	Use input/output interactions to supply an algorithm with information and deliver the computed product to the human user
4	Apply an algorithmic approach to create solutions for social science needs and problems.
5	Leverage existing algorithm libraries to create solutions for the social sciences.

Content outline

#	Topic

#	Topic
1	The syntax of a programming language
2	Using programming variables to define a problem and solution
3	Input and output for a computational algorithm designed to manage data or generate experimental stimuli
4	Addressing social science research problems with computational solutions

Student
expectations and
requirements

Initially, students will complete short in-class activities activities that will develop the programming skill. After acquiring a sufficient mastery of the programming language, students will develop solutions for problems in the social sciences such as data gathering, analysis and simulation.

Tentative texts and
course materials

Lutz, M. (2013). Learning Python, 5th Edition. Sebastopol, CA: O'Reilly Media.

Lubanovic, B. (2019). Introducing Python, 2nd Edition Fifth Edition. Sebastopol, CA: O'Reilly Media.

Miller, B., Ranum, D., & Anderson, J. (2019) Python Programming in Context. Burlington, MA: Jones & Bartlett Learning.

Kaefer, F., Kaefer, P. (2020) Introduction to Python Programming for Business and Social Science Applications. Thousand Oaks, CA: SAGE Publications, Inc.

Special equipment,
materials, or library
resources needed

The Department of Psychological Sciences maintains a teaching lab with computers. The computers are used for other existing PSYS courses and will be updated with free software to support the proposed course.

Additional
information

Students in a social science program outside of the Psychological Science major who would like to complete this course will be advised to complete the appropriate methods course within their own major.

10/28/21 - Emails were sent to Sociology and Criminology, Political Science, Economics, Public Health, and Psychology regarding the pre-requisites an inquiring about possible student demand. SEAS was also emailed a request for feedback on the course proposal.

Supporting
documentation

syllabus PsyS 415.pdf

PSYS 415 Library Resources form.pdf

Reviewer Comments

Key: 9500

Course Change Request

Date Submitted: 10/06/21 3:29 pm

Viewing: **SEAS** ~~**MFGE**~~ **310 : Safety in Industry** ~~**and Ergonomics**~~

Also listed as: ~~**MFGE 310**~~

Formerly known as: **MFGE 310**

Last revision: 10/10/21 3:25 pm

Changes proposed by: jsn97026

Catalog Pages
referencing this
course
> **MFGE 310:**
> Manufacturing Engineering Technology

Proposed Action

Active

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. 09/29/21 10:04 am Stacy Wilson (stacy.wilson): Approved for EAS Approval
2. 09/29/21 11:03 am Stuart Burris (stuart.burris): Rollback to EAS Approval for SC Dean
3. 10/04/21 2:51 pm Mark Cambron (mark.cambron): Rollback to Initiator
4. 11/05/21 3:33 pm Mark Cambron (mark.cambron): Approved for EAS Approval
5. 11/29/21 9:34 am Stuart Burris (stuart.burris): Approved for SC Dean

Contact(s)

Name	E-mail	Phone
Bryan Reaka	Bryan.Reaka@wku.edu	2707457032

Review Type   **Full Review**

Term for   Fall 2022
implementation

Academic Level   Undergraduate

Course prefix   **SEAS - Sch of Engr & App Sci** ~~MFGE - Manufacturing Engineering Technology~~ Course number 310
(subject area)

Department   Engineering & Applied Sciences, School of

College   Science and Engineering

Course title

 Safety **in Industry** ~~and Ergonomics~~

Abbreviated course   SAFETY **IN INDUSTRY** ~~AND ERGONOMICS~~
title

Course description

 ~~People-machine interaction, including an introduction to the relevant underlying humansciences.~~**Safety and management techniques necessary to address the unique** ~~The~~ interaction of how **industrial** ~~these~~ issues relate **to** ~~to~~ safety in **the** ~~the~~ workplace will be **identified and regulated.** ~~elaborated upon.~~ **This includes a study of applicable standards and methods of recognition, avoidance and prevention of potential hazards.**

 Students will have to opportunity to complete Occupational Safety and Health Administration (OSHA) 30-hour safety training certification. The certification will be in either Construction or General Industry.

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   150613 - Manufacturing Engineering
Technology/Technician.

Does this course have prerequisites

Yes

Prerequisites

And/Or	(	Course/Test Code	Min Grade/Score	Academic Level	)	Concurrency?
	(	MATH 116	C	UG		
Or		MA 116C	C	UG	)	
Or	(	MATH 117	D	UG		
Or		MA 117C	D	UG	)	
Or		MATH 118	D	UG		
Or		MATH 119	D	UG		
Or		MATH 127	D	UG		
Or		MATH 121	D	UG		
Or		MATH 136	D	UG		
Or		MATH 137	D	UG		
Or		MATH 142	D	UG		
Or		MATH 206	D	UG		
Or		MATH 237	D	UG		
Or		MATH 240	D	UG		
Or		MATH 275	D	UG		
Or		MATH 304	D	UG		
Or		MATH 305	D	UG		
Or		MATH 306	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

As industry have evolved, industry has evolved with new technologies. The industrial advisory board for SEAS has indicated a need for students to potentially come out with OSHA specific training. The change from MFGE to SEAS allows for a broader audience reflecting the importance of safety throughout multiple industries in SEAS.

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.

| Are you seeking Colonnade approval for this course? | No |

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

Learning outcomes

#	Learning outcomes
1	Describe What OSHA is and its importance in the workplace.
2	Identify Safety hazards within a work area and evaluate potential solutions.
3	Recognize and investigate the issues related to safety and human protection equipment in a workplace environment.
4	Assess the safety policies and procedures for a given workplace

Content outline

#	Topic
1	Accident costs
2	Workers Compensation
3	OSHA as it relates to Toxic Substances
4	OSHA as it relates to Noise and Vibration
5	OSHA as it relates to Bloodborne Pathogens
6	Violence in the Workplace
7	OSHA as it relates to Emergency Preparation
8	OSHA as it relates to Accident Investigation

Student
expectations and
requirements

Tentative texts and
course materials

Dul, Jan and Weerdmeester, Bernard (2008), Ergonomics for beginners, A quick reference guide, 3rd edition, CRC Press
- ISBN 13: 978-1-4200-7751-3
- ISBN: 1-4200-7751-1

OSHA 1910 (General Industry)

OSHA 1926 (Construction Industry)

Special equipment,
materials, or library
resources needed

Additional
information

Supporting
documentation

Reviewer Comments

Stuart Burris (stuart.burris) (09/29/21 11:03 am): Rollback: Full Review requires SEAS CC approval first; conversation with Stacy indicates this hasn't been to that committee yet. The last sentence in the updated course description will probably require some clarification/update. I had to look up 'OSHA 30' to even have a hint of what that means. A few in OCSE CC might, but almost no one in UCC will know. Suggested replacement: Course may

qualify for OSHA 30 Certification in either Construction or General Industry. If there are additional requirements for getting that certification (tests, fees, etc.), additional clarification may need to be added as well. Learning outcome #3 may also raise eyebrows in UCC due to its wording. Recommend changing to: Recognize and investigate the issues related to safety and human protection equipment in a workplace environment.

Mark Cambron (mark.cambron) (10/04/21 2:51 pm): Rollback: Sent back to Jason to make suggested changes from Dean's office.

Key: 9328

Course Change Request

Date Submitted: 10/17/21 8:16 pm

Viewing: **MFGE 490B : Senior Research for Engineering Technology Management**

Last revision: 11/29/21 10:07 am

Changes proposed by: bry60656

Catalog Pages
referencing this
course
  Manufacturing Engineering Technology
  School of Engineering and Applied Sciences

Proposed Action

Active

Contact(s)

Name	E-mail	Phone
Bryan Reaka	bryan.reaka@wku.edu	2707457032

Review Type	**Full Review**
Term for implementation	Summer 2022
Academic Level	Undergraduate
Course prefix (subject area)	MFGE - Manufacturing Engineering Technology Course number 490B
Department	Engineering & Applied Sciences, School of
College	Science and Engineering

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. 11/05/21 3:31 pm Mark Cambron (mark.cambron): Approved for EAS Approval
2. 11/29/21 9:33 am Stuart Burris (stuart.burris): Approved for SC Dean

Course title

Senior Research for **Engineering** Technology Management

Abbreviated course   **SR** ~~SENIOR~~ RESEARCH FOR **ENGR** TECH MGT
title

Course description

Students work on capstone research projects utilizing skills and knowledge from prior courses in the **Engineering** Technology Management program. Projects performed when possible will be for a specific client or industry. This course will require an approved course proposal prior to being able to register.

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   150613 - Manufacturing Engineering
                       Technology/Technician.

Does this course have prerequisites

Yes

Prerequisites

And/Or	(	Course/Test Code	Min Grade/Score	Academic Level	)	Concurrency?
	(	MFGE 356	C	UG		
Or		**SEAS 356**	**C**	**UG**		
Or		**MGT 314**	**C**	**UG**	**)**	
And		SEAS 390	C	UG		
And	(	MFGE 394	D	UG		Yes
Or		**SEAS 394**	**D**	**UG**	**)**	**Yes**

Corequisites
Equivalent Courses

Restrictions:

College restriction?   No

Field of study   No
restriction/major?

Classification   No
restriction?

Departmental
Restrictions

Reason for changing
the course

Title change and description of course reflects name change of the program form Technology Management to Engineering Technology Management.
The addition of SEAS 394 reflects a change in the Prefix for the MFGE 394 course to SEAS 394.
The addition of MFGE/SEAS 356 OR MGT 314 is indicative of an Operations Management course that has similar topical information to the MFGE 356 course.

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

Are you seeking   No
Colonnade approval
for this course?

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

Learning outcomes

#	Learning outcomes

#	Learning outcomes
1	Establish goals and milestones in a live project
2	Devise professional supporting evidence for a live project
3	Create project manuals with proper content and grammar

Content outline

#	Topic
1	Supporting project shows a professional understanding of the cumulative coursework in program
2	Students show technical competency in their area of expertise
3	Student presentation explains project clearly and concisely

Student
expectations and
requirements

Tentative texts and
course materials

Special equipment,
materials, or library
resources needed

Additional
information

Supporting
documentation

Reviewer Comments

Key: 9341

Program Change Request

Date Submitted: 11/02/21 1:38 pm

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

Last approved: 05/26/21 2:05 pm

Last edit: 11/29/21 9:24 am

Changes proposed by: gng27220

Catalog Pages
Using this Program
   Computer Science, Bachelor of Science (629P, 629)

Proposed Action

Approval Path

1. 11/01/21 1:47 pm
   Mark Cambron (mark.cambron): Rollback to Initiator
2. 11/02/21 11:26 am
   Mark Cambron (mark.cambron): Rollback to Initiator
3. 11/05/21 3:12 pm
   Mark Cambron (mark.cambron): Approved for EAS Approval
4. 11/29/21 9:24 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)

Active

Contact Person

Name	Email	Phone
Guangming Xing	guangming.xing@wku.edu	2707458848

Term of Implementation   2022-2023

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 semesterhours.To be admitted to the computer science major, students must complete CS 290 and CS 221 with grades of "C" orbetter.In addition, all CS courses counting toward the CS program major must be completed with a grade of "C" orbetter.Computer Science electives may include from 0-3 hour of 200-levelcourses.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 21, 2021 1:36pm

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	**Advanced Computational Problem Solving**	
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
~~ENG 307~~	~~Technical Writing~~	~~3~~
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	7

Total Hours		17-18

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
~~ENG 307~~	~~Technical Writing~~	~~3~~
Total Hours		4

1At 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 221	4
ENG 100	3	MATH 136	4
Colonnade - Arts & Humanities	3	COMM 145	3
General Elective	2	General Elective	3
Colonnade - Natural & Physical Science w/ lab	4		
	16		14

Second Year

Fall	Hours	Spring	Hours
CS 331	3	CS 351	3
~~ENG 307~~	~~3~~	CS 325	3
Colonnade - Literary Studies	3	HIST 101 or HIST 102	3
CS 2XX Elective	3	CS 339	3
STAT 301	3	General Elective	3

	12		15

Third Year

Fall	Hours	Spring	Hours
Colonnade - Natural & Physical Science w/ no lab	3	CS 382	3
CS 396	3	CS 3XX Elective	3
CS 360	3	Colonnade - Social & Behavioral	3
CS 3XX Elective	3	General Elective	3
ENG 300	3	World Language Requirement or General Elective	3
	15		15

Fourth Year

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

Total Hours 117

Computer Science, Systems/Scientific Applications Concentration

First Year

Fall	Hours	Spring	Hours
CS 180	4	CS 221	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 339	3	CS 351	3
CS 360	3	CS 325	3
Colonnade - Literary Studies	3	Math Elective	3
Colonnade - Natural & Physical Sciences w/ lab	4	ENG 307	3
		Colonnade - Natural & Physical Sciences w/ no lab	3
	13		15

Third Year

Fall	Hours	Spring	Hours
CS 396	3	CS 382	3
STAT 301	3	CS Elective (CS 372 or CS 381 or CS 446)	3
CS 360	3	Colonnade - Social & Behavioral	3

CS Elective (CS 443, CS 450, or CS 456)	3	Math Elective	3
ENG 300	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
Colonnade - Systems	3	Colonnade - Social & Cultural	3
CS Elective (CS 443 or CS 456)	3	Math/Science Elective	3
	15		15

Total Hours 118

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	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.
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.

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?

ENG 307 is not an additional requirement because it is not a required prerequisite for computer
science courses.

After revising the prerequisite for CS 270, it is appropriate for inclusion in the System/Scientific
option. Based on the current ABET CAC accreditation criteria, CS 315 and CS 371 are appropriate
for inclusion in the System/Scientific option. Adding the three courses to the System/Scientific option
will give more choices to the students in that option and streamline their course work for graduation.

Additional   **program-revise CS10-22-2021.docx**
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

Mark Cambron (mark.cambron) (11/01/21 1:47 pm): Rollback: all changes must be done in course leaf

Mark Cambron (mark.cambron) (11/02/21 11:26 am): Rollback: Issue with presentation.

Key: 334