MEMORANDUM TO: Ogden College of Science and Engineering Curriculum Committee

Dr. Melanie Autin
Dr. Simran Banga
Dr. Royhan Gani
Dr. Ting-Hui Lee
Dr. Andy Mienaltowski
Dr. Hope Marchionda
Dr. Todd Willian
Dr. Zhonghang Xia
Dr. Bangbo Yan

FROM: Dr. Stuart Burris, Chair

SUBJECT: Agenda for <u>Thursday, December 4, 2025</u>

A. OLD BUSINESS:

I. Consideration of the minutes of the November 2025 meeting.

B. NEW BUSINESS:

Type of item	Description of Item & Contact Information
Informational	**<u>The following items were sent through the expedited process</u>** Pre-req Change: CS 301
Action	**Proposal to Change a Program** Ref. 518: Architectural Science, Bachelor of Science Contact: Shahnaz.aly@wku.edu, 270-745-5849
Action	**Proposal to Create a New Course** CM 403: Construction Law Contact: Mi.an@wku.edu, 270-745-2580
Action	**Proposal to Change a Course** CIT 350: Database Administration I Contact: Yaser.mowafi@wku.edu, 270-745-3415
Action	**Proposal to Change a Course** CIT 352: Database Administration II Contact: Yaser.mowafi@wku.edu, 270-745-3415
Action	**Proposal to Change a Course** CIT 452: Advanced Database Administration I Contact: Yaser.mowafi@wku.edu, 270-745-3415
Action	**Proposal to Create a New Course** CIT 495: Computer Information Technologies with AI Tools I Contact: Yaser.mowafi@wku.edu, 270-745-3415

Action	**Proposal to Create a New Course** CIT 497: Computer Information Technologies with AI Tools II Contact: Yaser.mowafi@wku.edu, 270-745-3415
Action	**Proposal to Change a Program** Ref. 555: Computer Information Technology, Bachelor of Science Contact: Yaser.mowafi@wku.edu, 270-745-3415
Action	**Proposal to Change a Course** CS 315: Introduction To Unix Contact: Guangming.xing@wku.edu, 270-745-8848
Action	**Proposal to Change a Course** CS 381: Introduction to Computer Networks Contact: Guangming.xing@wku.edu, 270-745-8848
Action	**Proposal to Change a Course** CS 421: Data Structures and Algorithm Analysis Contact: Guangming.xing@wku.edu, 270-745-8848
Action	**Proposal to Create a New Course** CS 319: Applied Artificial Intelligence Contact: Zhonghang.xia@wku.edu, 270-745-6459
Action	**Proposal to Change a Program** Ref. 629P, 629: Computer Science, Bachelor of Science Contact: jeffrey.galloway@wku.edu, 270-745-2859
Action	**Proposal to Create a New Course** EE 433: AI Application in Power Systems Contact: Pallav.bera@wku.edu, 270—745-2016
Action	**Proposal to Create a New Course** EE 455: Applied Machine Learning for Engineers Contact: mm.nabi@wku.edu, 270-745-5848
Action	**Proposal to Change a Program** Ref. 537P, 537: Electrical Engineering, Bachelor of Science Contact: mark.cambron@wku.edu, 270-745-8868
Action	**Proposal to Change a Program** Ref. 476: Systems Engineering, Minor Contact: mark.cambron@wku.edu, 270-745-8868

C. OTHER BUSINESS

Minutes – OCSE Curriculum Committee **October 2025**

Members Present:
Dr. Melanie Autin, Dr. Simran Banga, Dr. Royhan Gani, Dr. Ting-Hui Lee, Dr. Andy Mienaltowski, Dr. Hope Marchionda, Dr. Todd Willian, Dr. Zhonghang Xia, Dr. Bangbo Yan
Guests Present:
Paul Woosley, Stephen King, Paige Smith, Navdeep Singh, Debra Shoulders, Phillip Gunter, Thomas Kingery, Luiz Silva, Leslie North, David Oliver, Mikhail Khenner, and Richard Schugart

FROM: Dr. Stuart Burris, Chair

The meeting was called to order at 4:00pm.

OLD BUSINESS:

Minutes from the October 2025 meeting were approved as posted.

NEW BUSINESS:

Action Agenda:
AGRI 392: Willian/Gani; Approved with friendly amendment
AGRI 393: Autin/Marchionda; Approved
ANSC 310: Autin/Willian; Approved
ANSC 420: Autin/Marchionda; Approved
ANSC 480: Autin/Marchionda; Approved
PLSS 413: Gani/Banga; Appr
AGEC 360, AGEC 361, AGEC 362, AGEC 366, and AGEC 463: Banga/Gani; Bundled and Approved with friendly amendment
AGED 200: Gani/Banga; Approved
AGED 471: Willian/Gani; Approved
AGED 475: Autin/Marchionda; Approved
AGRI 175: Autin/Banga; Approved
AGRI 291: Lee/Autin; Approved
AGRI 398: Autin/Marchionda; Approved
AGRI 493: Lee/Banga; Approved
ANSC 232: Willian/Lee; Approved
ANSC 333: Autin/Gani; Approved
ANSC 340: Willian/Banga; Approved with friendly amendment
ANSC 345: Banga/Gani; Approved
ANSC 352: Lee/Marchionda; Approved with friendly amendment
ANSC 360: Autin/Banga; Approved
ANSC 431: Autin/Willian; Approved

ANSC 432: Lee/Banga; Approved
ANSC 437, ANSC 438, ANSC 458, ANSC 475: Autin/Marchionda; Bundled and Approved
HORT 209, HOR 301, HORT 302, HORT 309, HORT 313, HORT 316, HORT 317, HORT 330, HORT 340, HORT 392. AGRP 418, HORT 419, AGRO 454, HORT 475; Autin/Willian; Bundled and Approved
BIOL 212; Autin/Marchionda; Approved
BIOL 312: Willian/ Marchionda; Approved
DISC 101: Gani/Willian; Approved
DISC 200: Willian/Lee; Approved
GEOG 391: Gani/ Autin; Approved with friendly amendment
Ref. 416, Disaster Science: Gani/Autin; Approved with friendly amendment
Ref. 422, Environmental, Earth, and Sustainability Sciences: Gani/Autin; Approved
Math 405: Autin/Lee; Approved
Math 406: Marchionda/Gani; Approved
STAT 480: Lee/Autin; Approved
Ref. 417, Mathematics Minor: Lee/Autin; Approved
Ref. 528, Mathematics Major: Banga/Gani; Approved
Ref. 728, Mathematics Major: Autin/Marchionda; Approved
Ref. 5012, Data Science: Lee/Banga; Approved
Ref. 747E/747, Psychological Sciences Major: Autin/Marchionda; Approved

Other Business:
None

Program Change Request

Date Submitted: 11/25/25 12:08 pm

Viewing: 518 : Architectural Science, Bachelor of Science

Last approved: 04/03/25 9:26 am

Last edit: 11/25/25 12:08 pm

Changes proposed by: shh64934

Catalog Pages
Using this Program
Architectural Science, Bachelor of Science (518)

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. 11/11/25 7:44 am Bryan Reaka (bryan.reaka): Rollback to Initiator
2. 11/21/25 9:57 am Bryan Reaka (bryan.reaka): Rollback to Initiator
3. 11/25/25 10:54 am Bryan Reaka (bryan.reaka): Approved for EAS Approval
4. 11/25/25 11:06 am Stuart Burris (stuart.burris): Rollback to Initiator
5. 11/25/25 9:19 pm Bryan Reaka (bryan.reaka): Approved for EAS Approval
6. 12/01/25 12:43 pm 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 12, 2023 by Jennifer Hammonds (jennifer.hammonds)
4. Jun 15, 2023 by Jessica Dorris (jessica.dorris)
5. Apr 3, 2025 by Shahnaz Aly (shahnaz.aly)

Active

Contact Person

Name	Email	Phone
Shahnaz Aly	shahnaz.aly@wku.edu	2707455849

Term of Implementation	2026-2027
Program Reference Number	518
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)	Architectural Science, Bachelor of Science

Will this program have concentrations?

No

CIP Code	04.0901 - Architectural Technology/Technician.
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)

Architectural Science is a bridge between design theory and construction practice. Architectural Technologists perform a variety of important functions in many areas of the architectural and building construction fields and are widely recognized by professionals in the construction industry. Graduates find employment as drafters, designers, construction planners, estimators, inspectors, technical sales representatives, and many other exciting areas.

Career Opportunities

Graduates obtain employment in a wide variety of organizations: architectural firms, engineering firms, interior design firms, contractors, design-build construction firms, surveying firms, government agencies, construction product manufacturers, construction material suppliers, inspection and testing firms, specialty consultants, and computer applications consultants.

Program Description

The program in Architectural Science is designed to provide graduates with a practical architectural education combining an understanding of the philosophy of building design with an applied technical knowledge of construction systems and materials. Graduates are prepared with the knowledge and skills to assist in developing drawings and related documentation, constructing architectural models, developing architectural renderings, creating digital images and visualizations, preparing cost estimates and construction planning documentation, and making professional presentations. Program instruction includes architectural drafting, construction methods and materials, design principles, environmental systems, building systems, building codes, structural principles, project management, sustainability, and professional presentations.

Curriculum Requirements (Catalog field: Program Requirements)

Program Requirements (77 hours)

Approved Shared Content from /shared/undergraduate-major-requirements/
Last Approved: Jun 30, 2025 9:25am

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.

Program Courses		
AS 151	Architectural Graphics	3

AS 163	Architectural Drafting	3
AS 180	Introduction to Architecture	3
AS 251	3D Modeling and Imaging	3
CM 261	Construction Methods and Materials	3
AS 263	Architecture Documentation I	3
AS 273	Architectural Detailing	3
CM 282	Building Structures	3
AS 305	Building Codes	3
SEAS 325	Survey of Building Systems	3
AS 351	Building Information Modeling	3
AS 373	Architecture Documentation II	3
AS 369	Architectural Design Studio I	4
MFGE 390	Project Management	3
SEAS 398	Internship I	1
CM 363	Construction Estimating and Bidding	3
AS 469	Architectural Design Studio II	4
AS 488	Comprehensive Design	3
AS 490	Senior Research for Architectural Sciences	3
CE 303	Construction Management	3
ENG 306	Business Writing	3
or ENG 307	Technical Writing	
MGT 200	Legal Environment of Business	3
or MGT 210	Organization and Management	
Select 14 hours of advisor-approved architectural science electives. At least 3 hours of electives are required to be upper division		14
CE 160	Principles of Surveying	
CE 161	Principles of Surveying Lab	
ACCT 110	Accounting for Decision Makers	
MKT 220	Basic Marketing Concepts	
RE 170C	Essentials of Real Estate	
RE 171C	Real Estate Brokerage Operation	
RE 172C	Real Estate Marketing	
RE 273C	Real Estate Law	

RE 274C	Real Estate Appraisals	
IDFM 120	Visual Design I	
IDFM 201	Interior Design Studio I	
IDFM 221	Visual Design II	
IDFM 243	Materials and Finishes for Interior Design	
IDFM 300	Interior Design Studio II	
IDFM 301	Interior Design Studio III	
IDFM 304	Lighting and Environmental Controls	
IDFM 344	Revit for Interiors I	
IDFM 401	Interior Design Studio V	
IDFM 421	Portfolio Design	
IDFM 427	Revit for Interiors II	
CE 316	Equipment & Methods	
CM 462	Construction Scheduling	
ART 405	Art Theory and Criticism	
GISC 316	Geographic Information Systems I	
AS 375	Special Architectural Problems	
AS 378	Architectural / Professional Presentation	
AS 380	Independent Study in Architectural Sciences	
AS 470	Land Development	
SEAS 401	Contemporary Issues in Architecture and Manufacturing	
SEAS 475	Selected Topics in Industry	
Total Hours		80

A minor or second major is not required.

Additional Courses Required for the Major

~~AS 180~~	~~Introduction to Architecture~~	~~3~~
MATH 117	Trigonometry	3
ECON 150	Introduction to Economics	3
or ECO 150C	Introduction to Economics	
or ECON 202	Principles of Economics (Micro)	
or ECO 202C	Principles of Economics (Micro)	
or ECON 203	Principles of Economics (Macro)	
or ECO 203C	Principles of Economics (Macro)	

or ECON 375	Moral Issues of Capitalism	
or ECON 390	Economics, Law, and Public Choice	
Total Hours		6

4-Year Plan

Finish in Four Plan

First Year

Fall	Hours	Spring	Hours
AS 151	3	AS 163	3
AS 180	3	CM 261	3
MATH 117	3	ENG 200	3
ENG 100	3	Colonnade - Arts & Humanities	3
HIST 101 or HIST 102	3	Colonnade - Natural & Physical Science w/out lab	3
	15		15

Second Year

Fall	Hours	Spring	Hours
AS 251	3	AS 273	3
AS 263	3	AS 351	3
AS 305	3	COMM 145	3
ECON 202	3	SEAS 325	3
CM 282	3	AS 369	4
	15		16

Third Year

Fall	Hours	Spring	Hours
AS 373	3	MFGE 390	3
CE 303	3	Architectural Science Elective	3
Architectural Science Elective	3	ENG 300	3
Colonnade - Social & Cultural	3	General Elective	3
SEAS 398	1	Colonnade - Local to Global	3
General Elective	1		
	14		15

Fourth Year

Fall	Hours	Spring	Hours
AS 469	4	Colonnade - Natural & Physical Science w/Lab	3
AS 488	3	AS 490	3
General Elective	3	Colonnade - Connections	3
Architectural Science Elective	2	Management Elective	3
CM 363	3	ENG 306 or ENG 307	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?

Yes

Outside Courses
Details

Who approved including these courses?	When were they approved?
Accounting - Dr. Biblehauser	11/7/2025
Real Estate - Dr. Ghezal	11/9/2025
Art - Kristina Arnold	11/6/2025
Marketing - Dr. Forbes	11/6/2025
GISC - Amy Nemon	11/6/2025

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 the ability to identify, formulate strategies and solve technical problems.	Analysis of pre-design of capstone project (comprehensive design), analysis of design development and construction documents of capstone project (Senior project), and appraisal of Student technical skills by employers during internship.
SLO 2	Demonstrate an ability to possess effective (oral/ written and/or graphic) communication skills.	Appraisals from industry professionals of capstone projects presentations, appraisals from industry professionals of schematic design presentations, and appraisal of student communication skills by employers during internship
SLO 3	Demonstrate the knowledge and capacity to manage a project through the different design phases.	Analysis of schematic design of capstone project, appraisals from industry professionals of capstone projects, and appraisal of students project management skills by employers during internship.

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

Are there any in-person on-campus requirements?

Does this program have experiential learning (practicum/internship/clinical)?

Does this program lead to professional licensure (excluding teaching certification)?

Library Resources

Attach library resources

Rationale for the program proposal?

The program faculty have identified additional courses in the department as well as in other departments that can be considered as approved electives. The program change reflects the additional courses.
The program coordinator has communicated with the respective departments about adding the courses as approved electives within the program.
As 180 is a core course in the curriculum and hence has been moved into required courses in the major. Since it is an approved colonnade course it does not increase the number of courses required to complete the degree.
Since we have moved AS 180 into the courses required in the major the program has specified that 3 hours of electives in the major should be upper division to fulfill the upper division requirement.

Additional
Attachments

Additional information or attachments

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

Revised by Registrar 6/15/2023. SEAS prefixes changes to MFGE prefix.

Reviewer Comments

Bryan Reaka (bryan.reaka) (11/11/25 7:44 am): Rollback: At request of proponent (11/11/2025)
Bryan Reaka (bryan.reaka) (11/21/25 9:57 am): Rollback: Elective upper division lower divison language
Stuart Burris (stuart.burris) (11/25/25 11:06 am): Rollback: Needs to check yes for 'Does this program include courses outside your department?' and then will need to complete the table that will appear to indicate who in the other departments was contacted about these courses being added and when. This applies to the added courses in ACCT, MKT, RE, ART, and GISC.

Key: 261

Course Change Request

New Course Proposal

Date Submitted: 11/24/25 8:32 am

Viewing: **CM 403 : Construction Law**

Last revision: 11/24/25 8:32 am

Changes proposed by: msn28768

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. 10/09/25 1:56 am Shahnaz Aly (shahnaz.aly): Rollback to Initiator
2. 10/22/25 10:52 am Bryan Reaka (bryan.reaka): Rollback to Initiator
3. 11/21/25 9:59 am Bryan Reaka (bryan.reaka): Rollback to Initiator
4. 11/24/25 9:49 am Bryan Reaka (bryan.reaka): Approved for EAS Approval
5. 12/01/25 12:43 pm Stuart Burris (stuart.burris): Approved for SC Dean

Name	E-mail	Phone
Mi Sun An	mi.an@wku.edu	(270)745-2580

Term for implementation: Fall 2025

Academic Level: Undergraduate

Course prefix (subject area): CM - Construction Management

Course number: 403

Department: Engineering & Applied Sciences, School of

College: Science and Engineering

Course title
Construction Law

Abbreviated course title: CONSTRUCTION LAW

Course description
A comprehensive overview of construction law applying to the management of construction projects. It examines the legal principles governing construction contracts, risk allocation, dispute resolution, and regulatory compliance. Students will explore the rights and responsibilities of key stakeholders.
The course emphasizes contract formation, interpretation, and administration, focusing on standard construction contract forms, “red flag” clauses, and risk management strategies. Students will learn to identify potential legal risks, draft and negotiate contract terms, and resolve construction disputes.

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: 460412 - Building/Construction Site Management/Manager.

Does this course have prerequisites

Yes

Prerequisites

And/Or	(	Course/Test Code	Min Grade/Score	Academic Level	)	Concurrency?
	(	CE 303	C	UG		Yes
Or		CM 250	C	UG	)	Yes

Corequisites

Equivalent Courses

Restrictions:

College restriction? No

Field of study restriction/major? No

Classification restriction? No

Departmental Restrictions

Reason for developing the proposed course

To add more elective courses to the construction management program.

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.

The Civil Engineering program was consulted concerning the potential impact of possible duplication or conflict.
Jason Wilson on Feb. 28, 2025

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?

25

How many students per academic year are expected to enroll?

25

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

The currently enrolled number of students in Construction Management program is 212 as of February 2025. From this figure, the number of seniors is calculated as around 50.
As this course is an elective, it is projected to have 25 students per academic year (50%).

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	UNDERSTAND: Explain the fundamental legal principles governing construction contracts, including formation, interpretation, and enforceability.
2	APPLICATION: Apply relevant laws, codes, and regulatory compliance requirements to construction project scenarios.
3	ANALYSIS: Analyze risk allocation methods and evaluate commercial terms to determine their impact on project delivery and stakeholder responsibilities.
4	CREATION: Develop effective dispute resolution strategies and formulate recommendations for preventing or managing conflicts in construction projects.

Content outline

#	Topic
1	Introduction to Construction Law
2	Parties Involved and Their Legal Relationships
3	Legal Framework and Regulatory Environment
4	Contract Formation and Interpretation
5	Types of Construction Contracts
6	Risk Allocation and Contract Clauses
7	Contract Performance and Termination
8	Dispute Resolution in Construction

Student expectations and requirements

Students are expected to participate and engage with learning. They are required to do assignments (reading, writing (case brief and legal analysis paper), and case studies). They are also required to do problem-solving exercises of (1) contract interpretation, (2) dispute resolution, and (3)claim management. Class-presentation of case studies. Students are expected to complete quizzes and exams.

Tentative texts and course materials

Construction Contracting Business and Legal Principles 2nd Edition by Stuart H. Bartholomew

Special equipment, materials, or library resources needed

The textbook is available through OER.

Additional information

Supporting documentation

Reviewer Comments

Shahnaz Aly (shahnaz.aly) (10/09/25 1:56 am): Rollback: Resubmit

Bryan Reaka (bryan.reaka) (10/22/25 10:52 am): Rollback: AT request of proponent

Bryan Reaka (bryan.reaka) (11/21/25 9:59 am): Rollback: Adjust CE 303 OR CM 250

Key: 9946

Course Change Request

Date Submitted: 11/03/25 9:47 am

Viewing: CIT 350 : Database Administration I

Last approved: 10/02/24 3:18 am

Last revision: 11/03/25 9:47 am

Changes proposed by: ysr38557

Catalog Pages referencing this course

Computer Info Technology (CIT)

School of Engineering and Applied Sciences

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. 10/21/25 7:16 am Bryan Reaka (bryan.reaka): Rollback to Initiator
2. 11/21/25 9:59 am Bryan Reaka (bryan.reaka): Approved for EAS Approval
3. 12/01/25 12:43 pm Stuart Burris (stuart.burris): Approved for SC Dean

History

1. Dec 15, 2023 by Yaser Mowafi (yaser.mowafi)
2. Oct 2, 2024 by Mark Cambron (mark.cambron)

Name	E-mail	Phone
yaser mowafi ~~Mark Cambron~~	yaser.mowafi@wku.edu ~~mark.cambron@wku.edu~~	2707453415 ~~2707458868~~

Review Type: Full Review ~~Expedited~~

Term for implementation: Fall 2026

Academic Level: Undergraduate

Course prefix (subject area): CIT - Computer Info Technology

Course number: 350

Department: Engineering & Applied Sciences, School of

College: Science and Engineering

Course title
Database Administration I

Abbreviated course title: DATABASE ADMINISTRATION I

Course description
Introduction to database applications and related fundamentals including database models, normalization, and principles of effective database design.

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: 110103 - Information Technology.

Does this course have prerequisites

Yes

Prerequisites

And/Or	(	Course/Test Code	Min Grade/Score	Academic Level	)	Concurrency?
		CIT 300	C	UG		Yes

Corequisites

Equivalent Courses

Restrictions:

College restriction? No

Field of study restriction/major? Yes

Select:
Include

Major:

Field of stud/major restriction
555 - Computer Information Tech

Classification restriction? No

Departmental Restrictions

Reason for changing the course
Reduce redundancy: CIT 352 currently overlaps with CIT 350 instead of extending student learning. Applied IT focus: Remove Microsoft Access and CS-heavy theory; emphasize practical SQL and administration skills for CIT careers. ~~CIT program believes that CIT300 can be a pre-req or may be taken concurrently~~

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 No

to teacher certificate?

Are you seeking Colonnade approval for this course?	No

Student Learning Outcomes

#	Student Learning Outcomes
1	Create physical tables and run database queries. ~~queries using the forms-based query tool in Microsoft Access~~
2	Write SQL statements: ~~statements and queries~~ queries (SELECT, WHERE, ORDER BY) and data manipulation (INSERT, UPDATE, DELETE)
3	Use entity relationship diagrams (ERDs) for data modeling
4	Design schemes and physical tables using ER diagrams and normalize up to 3NF ~~Design physical tables~~
5	Connect databases to users, computer systems, and applications
6	Manage basic user privileges and secure database data ~~Secure database data~~
7	Handle cursor processing, transaction management, and apply keys and constraints to maintain integrity ~~performance tuning~~
~~8~~	~~Integrate XML documents and objects into databases~~
8	Explain the role of relational databases in IT systems

Content outline

#	Topic
1	Introduction to relational databases and SQL. ~~Microsoft Access & MySQL Introduction~~ ~~Microsoft Access:Building Tables & Relationships~~ ~~Microsoft Access:Creating Queries~~ ~~Microsoft Access:Creating Forms~~ ~~Microsoft Access:Creating Reports~~ ~~MySQL:Workbench~~ ~~MySQL:Data Retrieval~~

#	Topic
	~~MySQL:Data Insert, Update, & Delete~~ ~~MySQL:Object Creation – Databases, Tables, and Indexes~~
2	Building Tables & Relationships using ER modeling and normalization (1NF–3NF).
3	SQL basics (schemas, tables, datatypes).
4	SQL queries and data retrieval (SELECT, WHERE, ORDER BY)
5	SQL CRUD operations (INSERT, UPDATE, DELETE).
6	Creating forms and reports.
7	Basic user management (roles/privileges).

Student expectations and requirements

Tentative texts and course materials

Special equipment, materials, or library resources needed

Additional information

Supporting documentation

Reviewer Comments

Bryan Reaka (bryan.reaka) (10/21/25 7:16 am): Rollback: cannot be expedited, term of implementation, as written the learning objectives represent a new course

Key: 1986

Course Change Request

Date Submitted: 11/03/25 10:14 am

Viewing: CIT 352 : Database Administration II

Last approved: 02/13/24 3:16 am

Last revision: 11/03/25 10:14 am

Changes proposed by: ysr38557

Programs referencing this course

555: Computer Information Technology, Bachelor of Science

Other Courses referencing this

Proposed Action

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. 10/21/25 7:17 am Bryan Reaka (bryan.reaka): Rollback to Initiator
2. 11/21/25 9:59 am Bryan Reaka (bryan.reaka): Approved for EAS Approval
3. 12/01/25 12:43 pm Stuart Burris (stuart.burris): Approved for SC Dean

History

1. Feb 13, 2024 by stc51902

Active

Contact(s)

Name	E-mail	Phone
yaser mowafi ~~Stacy Wilson~~	yaser.mowafi@wku.edu ~~stacy.wilson@wku.edu~~	270-745-6394

Review Type	Full Review ~~Expedited~~		
Term for implementation	Fall 2026		
Academic Level	Undergraduate		
Course prefix (subject area)	CIT - Computer Info Technology	Course number	352
Department	Engineering & Applied Sciences, School of		
College	Science and Engineering		

Course title

Database Administration II

Abbreviated course title: DATABASE ADMINISTRATION II

Course description

A continuation of CIT 350 with emphasis on developing distributed database solutions, client-server models for business use and advanced SQL.

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: 110103 - Information Technology.

Does this course have prerequisites

Yes

Prerequisites

And/Or	(	Course/Test Code	Min Grade/Score	Academic Level	)	Concurrency?
		CIT 350	C	UG		

Corequisites

Equivalent Courses

Restrictions:

College restriction? No

Field of study restriction/major? Yes

Select:
Include

Major:

Field of stud/major restriction
555 - Computer Information Tech

Classification restriction? No

Departmental Restrictions

Reason for changing the course
Reduce redundancy: CIT 352 currently overlaps with CIT 350 instead of extending student learning.
Applied IT focus: Remove Microsoft Access and CS-heavy theory; emphasize practical SQL and administration skills for CIT careers.
Strengthen progression: Clear scaffold from foundations (CIT 350) → intermediate SQL/admin (CIT 352) ~~submit required information for Courseleaf~~

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	Create and write intermediate ~~run~~ SQL queries with multi-table JOINs, grouping, and subqueries. ~~commands in MySQL~~
2	Add/remove and update data in the tables. ~~tables~~
3	Perform set operations (UNION, INTERSECT, EXCEPT). ~~(union, intersection, and difference)~~
4	Manipulate a database and implement stored procedures and triggers. ~~with MySQL commands~~
5	Apply transaction concepts (commit, rollback).
6	Interpret simple query execution plans for troubleshooting.

Content outline

#	Topic
1	SQL basics and commands. ~~SQL commands~~
2	Database layout. ~~layout~~
3	Table management in databases: ~~databases~~ Multi-table JOINs, and aggregates and GROUP BY with HAVING.
4	Subqueries and nested queries.
5	Stored procedures, triggers, and set operations.
6	Views and indexes.
7	Transaction control basics and intro to execution plans.

Student expectations and requirements

In-depth presentation of the important aspects of database systems and applications, and related technologies. Students expected to be familiar with elementary programming and data structuring concepts.

Tentative texts and course materials

Fundamentals of Database Systems 7e
Author(s): Ramez Elmasri, Shamkant B. Navathe
Publisher: Pearson ISBN 978-0-13-397122-4

Special equipment, materials, or library resources needed

Additional information

Supporting documentation

Reviewer Comments

Bryan Reaka (bryan.reaka) (10/21/25 7:17 am): Rollback: cannot be expedited, term of implementation, as written the learning objectives represent a new course (rewrite or rewording)

Key: 1987

Course Change Request

Date Submitted: 11/25/25 11:23 am

Viewing: CIT 452 : Advanced Database Administration I

Last approved: 12/15/23 3:19 am

Last revision: 11/25/25 11:23 am

Changes proposed by: ysr38557

Other Courses referencing this course

In The Catalog Description:

CIT 454 : Advanced Database Administration II

Proposed Action

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. 09/22/25 12:37 pm Shahnaz Aly (shahnaz.aly): Rollback to Initiator
2. 11/21/25 9:59 am Bryan Reaka (bryan.reaka): Approved for EAS Approval
3. 11/21/25 2:04 pm Stuart Burris (stuart.burris): Rollback to Initiator
4. 11/25/25 11:24 am Bryan Reaka (bryan.reaka): Approved for EAS Approval
5. 12/01/25 12:43 pm Stuart Burris (stuart.burris): Approved for SC Dean

History

1. Dec 15, 2023 by stc51902

~~Suspended~~
Active

Contact(s)

Name	E-mail	Phone
yaser mowafi ~~Stacy Wilson~~	yaser.mowafi@wku.edu ~~stacy.wilson@wku.edu~~	2707453415 ~~2707456394~~

Review Type: Full Review ~~Expedited~~

Term for implementation: Fall 2026

Academic Level: Undergraduate

Course prefix (subject area): CIT - Computer Info Technology

Course number: 452

Department: Engineering & Applied Sciences, School of

College: Science and Engineering

Course title
Advanced Database Administration I

Abbreviated course title: ADV DATABASE ADMINISTRATION I

Course description
Focuses on administering the enterprise database system. Emphasizes implementation and administration issues associated with large-scale database systems.

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 110103 - Information Technology.

Does this course have prerequisites

Yes

Prerequisites

And/Or	(	Course/Test Code	Min Grade/Score	Academic Level	)	Concurrency?
		CIT 352	C	UG		

Corequisites

Equivalent Courses

Restrictions:

College restriction? No

Field of study restriction/major? Yes

Select:

Include

Major:

Field of stud/major restriction
555 - Computer Information Tech

Classification restriction? No

Departmental Restrictions

Reason for changing the course

Course was offered on demand only and need be offered online to fulfill Program SLO.
Modernize content: expose students to cloud, NoSQL, and NewSQL platforms common in today's IT environments.
Strengthen progression: Clear scaffold from foundations (CIT 350) → intermediate SQL/admin (CIT 352) → advanced/modern systems (CIT 452).

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 other departments/programs 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	Apply advanced SQL (window functions, recursive queries, CTEs).
2	Normalize databases beyond 3NF (BCNF).
3	Implement indexing, partitioning, and physical storage strategies.
4	Manage concurrency, recovery, and ACID compliance in multi-user environments.
5	Compare/implement modern architectures (distributed, cloud-native, NoSQL, NewSQL, hybrid).
6	Apply advanced security (auditing, encryption, row-level security).
7	Integrate databases with applications/APIs
8	Optimize queries using execution plans and advanced tuning.

Content outline

#	Topic
1	Advanced SQL (window functions, recursive queries, CTEs).
2	Advanced normalization (BCNF).
3	Indexing and partitioning.
4	Advanced transactions & concurrency.
5	Modern architectures (NoSQL, NewSQL, cloud-native, distributed).
6	Complex data types (JSON, XML, spatial, graph).
7	Advanced database security (auditing, encryption).

#	Topic
8	Application integration & APIs.
9	Advanced performance tuning & monitoring.

Student expectations and requirements

Advanced presentation of the important aspects of database systems and applications, and related technologies. Students expected to be familiar with elementary programming and data structuring concepts and that they have had some exposure to the basics of computer organization.

Tentative texts and course materials

Fundamentals of Database Systems 7e
Author(s): Ramez Elmasri, Shamkant B. Navathe
Publisher: Pearson ISBN 978-0-13-397122-4

Special equipment, materials, or library resources needed

Additional information

Supporting documentation

Reviewer Comments

Shahnaz Aly (shahnaz.aly) (09/22/25 12:37 pm): Rollback: Review course outcomes
Stuart Burris (stuart.burris) (11/21/25 2:04 pm): Rollback: Must go through full review due to being multiple changes to a course. Change from Expedited to Full.

Key: 1998

Course Change Request

New Course Proposal

Date Submitted: 10/22/25 3:49 pm

Viewing: **CIT 495 : Computer Information Technologies with AI Tools I**

Last revision: 10/22/25 3:49 pm

Changes proposed by: ysr38557

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. 09/10/25 10:42 am Mark Cambron (mark.cambron): Rollback to Initiator
2. 09/22/25 12:37 pm Shahnaz Aly (shahnaz.aly): Rollback to Initiator
3. 10/21/25 7:14 am Bryan Reaka (bryan.reaka): Rollback to Initiator
4. 11/21/25 9:59 am Bryan Reaka (bryan.reaka): Approved for EAS Approval
5. 12/01/25 12:43 pm Stuart Burris (stuart.burris): Approved for SC Dean

Name	E-mail	Phone
Ysser Mowafi	yaser.mowafi@wku.edu	2707453415

Term for implementation: Fall 2026

Academic Level: Undergraduate

Course prefix (subject area): CIT - Computer Info Technology

Course number: 495

Department: Engineering & Applied Sciences, School of

College: Science and Engineering

Course title
Computer Information Technologies with AI Tools I

Abbreviated course title: CIT with AI tools I

Course description
Introduction to emerging trends in information technology applications and services with an emphasis on the integration of artificial intelligence tools. Implement AI-enhanced systems to improve productivity, user experience, and overall effectiveness.

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: 111099 - Computer/Information Technology Services Administration and Management, Other.

Does this course have prerequisites

Yes

Prerequisites

And/Or	(	Course/Test Code	Min Grade/Score	Academic Level	)	Concurrency?
		CIT 300	C	UG		Yes

Corequisites

Equivalent Courses

Restrictions:

College restriction? No

Field of study restriction/major? No

Classification restriction? No

Departmental Restrictions

Reason for developing the proposed course

Refreshing the program curricula to keep pace with latest AI emerging technologies, evolving students needs, and workforce demands.

Is this related to other courses at WKU?

Yes

Related courses

CIS 320 - Personal Technologies with Artificial Intelligence

CIS 321 - Emerging Technologies with Artificial Intelligence

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.

From: Blankenship, Ray <ray.blankenship@wku.edu>
Sent: Tuesday, September 23, 2025 9:54 AM
To: Mowafi, Yaser <yaser.mowafi@wku.edu>
Subject: Re: New courses proposals comments

Hello Dr. Mowafi,

I do not have any issues with you going forward with your two course proposals. Your topics are substantially different than ours.

Thank you for sharing you list of topics.

Ray

Ray J. Blankenship, Ph.D., MBA
Chair & Professor of Analytics & Information Systems
Gordon Ford College of Business,
1-270-745-3509, ray.blankenship@wku.edu

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

How many students per section are expected to enroll in this proposed course?
30

How many students per academic year are expected to enroll?
30

How were these projections calculated? Explain any supporting evidence/data you

have for arriving at these projections:
Current student enrollment at the program.

How are these related?
Supporting courses curricula with AI tools.

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	Recognize programming fundamentals, data analysis, and API integration
2	Describe core AI concepts (capabilities, limits, inputs/outputs, inference) and distinguish appropriate vs. inappropriate use cases in IT contexts.
3	Explain human-centered, ethical, and accessible design principles for AI-enabled features.
4	Apply prompt strategies to steer system behavior and document prompt rationales and assumptions.
5	Prepare and transform inputs/outputs (pre-/post-processing) to meet functional and quality requirements.
6	Evaluate AI outputs using lightweight rubrics, scenario tests, and error-analysis to identify risks (bias, privacy, safety).
7	Implement basic security and privacy practices (secret handling, data minimization, logging, rate limiting).
8	Communicate risks, mitigations, and governance considerations for AI features to technical and non-technical stakeholders.

Content outline

#	Topic
1	AI landscape, terminology, and programing fundamentals
2	Responsible AI foundations: ethics, safety, bias, consent, transparency
3	Human-centered AI: UX patterns, failure states, accessibility basics
4	API integration fundamentals: web protocols, authentication
5	Prompts fundamentals: task framing, constraints, exemplars, evaluation by examples

#	Topic
6	Grounding with enterprise knowledge (retrieval-style workflows)
7	Output handling: parsing, validation, post-processing
8	Data practices: privacy, retention, redaction, logging
9	Testing AI features: prompt tests, scenario tests, qualitative rubrics
10	Orchestration basics: multi-step flows, state, error handling, fallbacks
11	Quality & reliability: measuring usefulness, harmfulness, and robustness
12	Security for AI features: input/output validation, injection-style risks, abuse vectors

Student expectations and requirements

The course allows students to recognize core concepts of where AI fits in CIT along with ethical considerations of responsible AI practices.

Tentative texts and course materials

Hugging Face Transformers Essentials: From Fine-Tuning to Deployment. By:Robert Johnson. Publisher: HiTeX Press, 2025.ISBN:9798896651246

Special equipment, materials, or library resources needed

None.

Additional information

Supporting documentation

Reviewer Comments

Mark Cambron (mark.cambron) (09/10/25 10:42 am): Rollback: Should have language for Lab or changed to lecture in course type.

Shahnaz Aly (shahnaz.aly) (09/22/25 12:37 pm): Rollback: Review course outcomes

Bryan Reaka (bryan.reaka) (10/21/25 7:14 am): Rollback: term of implementation

Key: 10006

Course Change Request

New Course Proposal

Date Submitted: 09/23/25 10:51 am

Viewing: **CIT 497 : Computer Information Technologies with AI Tools II**

Last revision: 09/23/25 10:51 am

Changes proposed by: ysr38557

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. 09/10/25 10:42 am Mark Cambron (mark.cambron): Rollback to Initiator
2. 09/22/25 12:37 pm Shahnaz Aly (shahnaz.aly): Rollback to Initiator
3. 10/17/25 10:23 am Shahnaz Aly (shahnaz.aly): Approved for EAS Approval
4. 12/01/25 12:43 pm Stuart Burris (stuart.burris): Approved for SC Dean

Proposed Action

Active

Contact(s)

Name	E-mail	Phone
Ysser Mowafi	yaser.mowafi@wku.edu	2707453415

Term for implementation: Fall 2026

Academic Level	Undergraduate		
Course prefix (subject area)	CIT - Computer Info Technology	Course number	497
Department	Engineering & Applied Sciences, School of		
College	Science and Engineering		

Course title

Computer Information Technologies with AI Tools II

Abbreviated course title: CIT with AI Tools II

Course description

Advanced coverage of artificial intelligence tools, techniques, and their application with a focus on developing and refining AI solutions, optimizing human–AI interaction, and implementing secure, ethical, and accessible AI-driven applications for organizational use.

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: 111099 - Computer/Information Technology Services Administration and Management, Other.

Does this course have prerequisites

Yes

Prerequisites

And/Or	(	Course/Test Code	Min Grade/Score	Academic Level	)	Concurrency?
		CIT 495	C	UG		Yes

Corequisites

Equivalent Courses

Restrictions:

College restriction? No

Field of study restriction/major? No

Classification restriction? No

Departmental Restrictions

N/A.

Reason for developing the proposed course

Refreshing the program curricula to keep pace with latest AI emerging technologies, evolving students needs, and workforce demands.

Is this related to other courses at WKU?

Yes

Related courses

CIS 320 - Personal Technologies with Artificial Intelligence

CIS 321 - Emerging Technologies with Artificial Intelligence

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.

Hello Dr. Mowafi,

I do not have any issues with you going forward with your two course proposals. Your topics are substantially different than ours.

Thank you for sharing you list of topics.

Ray

Ray J. Blankenship, Ph.D., MBA
Chair & Professor of Analytics & Information Systems
Gordon Ford College of Business,
1-270-745-3509, ray.blankenship@wku.edu

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

one

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

30

How many students per academic year are expected to enroll?

30

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

Current student enrollment at the program.

How are these related?

Supporting courses' curricula with AI tools.

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	Architect AI-enabled systems end-to-end using appropriate integration patterns
2	Select and justify model/service options based on task fit, quality, latency, privacy, and cost constraints
3	Design datasets and workflows for evaluation and adaptation, documenting provenance and consent
4	Develop advanced interaction strategies with measurable quality targets
5	Implement data-grounded workflows and mitigate hallucination and leakage risks
6	Adapt models and compare trade-offs
7	Deploy AI components and monitor quality, drift, safety, and cost in production
8	Apply governance, compliance, security, and accessibility standards

Content outline

#	Topic
1	AI solution architecture patterns; non-functional requirements
2	Model/service selection: evaluation criteria, SLAs, privacy/cost/latency trade-offs
3	Data lifecycle & governance: curation, labeling, consent, documentation, versioning
4	Advanced interaction design and structured outputs
5	Knowledge grounding: indexing, chunking, and retrieval policies
6	Evaluation frameworks, adaptation strategies, deployment patterns
7	Adaptation strategies: configuration vs. prompt optimization vs. fine-tuning
8	Deployment patterns considerations and configuration
9	Performance engineering & observability and monitoring
10	Security: threat modeling for AI, data exfiltration pathways, abuse prevention, red-teaming

#	Topic
11	Governance & compliance: policy alignment, audit artifacts, accessibility & fairness audits
12	Multimodal inputs/outputs and agentic workflows

Student expectations and requirements

The course allows students to recognize core concepts of where AI fits in CIT along with ethical considerations of responsible AI practices.

Tentative texts and course materials

Hugging Face Transformers Essentials: From Fine-Tuning to Deployment.
By:Robert Johnson. Publisher: HiTeX Press, 2025.ISBN:9798896651246

Special equipment, materials, or library resources needed

None.

Additional information

Supporting documentation

Reviewer Comments

Mark Cambron (mark.cambron) (09/10/25 10:42 am): Rollback: Should have language for Lab or changed to lecture in course type.

Shahnaz Aly (shahnaz.aly) (09/22/25 12:37 pm): Rollback: Review course outcomes

Key: 10007

Program Change Request

Date Submitted: 11/24/25 10:38 am

Viewing: 555 : Computer Information Technology, Bachelor of Science

Last approved: 01/22/25 1:07 pm

Last edit: 11/24/25 10:38 am

Changes proposed by: ysr38557

Catalog Pages
Using this Program
Computer Information Technology, Bachelor of Science (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. 11/21/25 9:58 am Bryan Reaka (bryan.reaka): Rollback to Initiator
2. 11/24/25 11:40 am Bryan Reaka (bryan.reaka): Approved for EAS Approval
3. 12/01/25 12:43 pm 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)
5. Jun 5, 2024 by stc51902
6. Jan 22, 2025 by Jessica Dorris (jessica.dorris)

Active

Contact Person

Name	Email	Phone
Yaser Mowafi	yaser.mowafi@wku.edu	270-745-3415

Term of Implementation	2026-2027
Program Reference Number	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 hours)

Approved Shared Content from /shared/undergraduate-major-requirements/
Last Approved: Jun 30, 2025 9:25am

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 hours of upper-division CIT coursework, depending on transfer credits. All courses should be selected consistent with WKU's degree requirements including:
30 hours minimum must be earned at WKU (typically satisfied by CIT course requirements below)
42 hours must be in upper-division credit (30 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
CS 146 or MATH 116 or higher
For **transfer students** (with an Associate of Applied Science degree or ~~or~~ equivalent in computer technology or ~~or~~ related major), 30 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 five courses from 400-level CIT courses.		15
~~MFGE 342~~	~~Manufacturing Operations~~	

~~SEAS 367~~	~~Supervised Work Experience in Industry~~	
~~MFGE 390~~	~~Project Management~~	
~~MFGE 394~~	~~Lean~~	
~~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,** 48 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 five courses from 400-level CIT courses.		15
~~MFGE 342~~	~~Manufacturing Operations~~	
~~SEAS 367~~	~~Supervised Work Experience in Industry~~	
~~MFGE 390~~	~~Project Management~~	
~~MFGE 394~~	~~Lean~~	
~~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
CS 146 or MATH 116	3	World Language Requirement or General Elective	3
World Language Requirement or General Elective	3	HIST 101 or HIST 102	3
~~IDST 175~~	~~3~~		
General Elective	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

Are there any in-person on-campus requirements?

Does this program have experiential learning (practicum/internship/clinical)?

Does this program lead to professional licensure (excluding teaching certification)?

Library Resources

Attach library resources

Rationale for the program proposal?

Current and newly proposed courses meet students' needs and requirements with educational focus areas closely aligned with the CIT program learning outcomes.

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

Bryan Reaka (bryan.reaka) (11/21/25 9:58 am): Rollback: 4 year plan change 1st semeter (Math 116 or CS146) and Remove IDST 175 to a general elective

Key: 263

Course Change Request

Date Submitted: 11/24/25 11:07 am

Viewing: **CS 315 : System Administration**

~~**Introduction to Unix**~~

Last approved: 12/01/23 3:18 am

Last revision: 11/24/25 11:07 am

Changes proposed by: jff36922

Catalog Pages referencing this course

Computer Science (Univ) (CS)

School of Engineering and Applied Sciences

Proposed Action

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. 11/21/25 10:00 am Bryan Reaka (bryan.reaka): Approved for EAS Approval
2. 11/21/25 2:04 pm Stuart Burris (stuart.burris): Rollback to EAS Approval for SC Dean
3. 11/21/25 3:22 pm Bryan Reaka (bryan.reaka): Rollback to Initiator
4. 11/24/25 11:41 am Bryan Reaka (bryan.reaka): Approved for EAS Approval
5. 12/01/25 12:43 pm Stuart Burris (stuart.burris): Approved for SC Dean

History

1. Dec 1, 2023 by Guangming Xing (guangming.xing)

Active

Contact(s)

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

Review Type: Full Review ~~Expedited~~

Term for implementation: Fall 2026

Academic Level: Undergraduate

Course prefix (subject area): CS - Computer Science (Univ)

Course number: 315

Department: Engineering & Applied Sciences, School of

College: Science and Engineering

Course title

System Administration ~~Introduction to Unix~~

Abbreviated course title: SYSTEM ADMINISTRATION ~~INTRO TO UNIX~~

Course description

This course provides a comprehensive overview of system administration, focusing on command-line interface navigation, user management, and shell scripting for task automation. Students will examine modern software deployment by analyzing microservice architectures and managing the lifecycles of isolated application environments. ~~Use of the UNIX operating system as a program development environment.Topics include programming tools like debuggers, make, advanced editing, shell programming, and use of the X Window system.Note:Permission of instructor 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 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 290	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

Updating material. ~~Add Student Learning and Content Outline~~

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	Navigate and manage the Linux file system, including creating and modifying files and directories using the command line interface (CLI). ~~Interactively use a UNIX shell.~~
2	Control a Linux system by managing user/group accounts, file permissions, and system level processes and services. ~~Use common UNIX utilities.~~
3	Automate tasks by developing, debugging, and using ~~with~~ shell scripts. ~~programs.~~
4	Administer Linux systems by managing software packages, configuring network interfaces, and analyzing system logs. ~~Use an advanced editor.~~
5	Explain ~~Describe~~ and use core principles of containerization. ~~software maintenance tools.~~
6	Create and use of container configuration files.
7	Manage lifecycles of containers.
8	Compare and contrast monolithic and microservice architectures.
9	Successful deployment of a multi-container microservice application.
10	Explain and use of an Infrastructure as Code (IaC) configuration and deployment framework.

Content outline

#	Topic
1	Basic commands such as: ls, cd, grep, mkdir, etc.
2	Command structure
3	File system and attributes
4	Editor such as vi or vim
5	Shell and Shell programming
6	Process

#	Topic
7	Filters and Regular Expressions
8	Filtering and awk programming

Student expectations and requirements

Tentative texts and course materials

Special equipment, materials, or library resources needed

Additional information

Supporting documentation

Reviewer Comments

Stuart Burris (stuart.burris) (11/21/25 2:04 pm): Rollback: Must go through full review due to being multiple changes to a course. Change from Expedited to Full.

Bryan Reaka (bryan.reaka) (11/21/25 3:22 pm): Rollback: From: Burris, Stuart <stuart.burris@wku.edu> Sent: Friday, November 21, 2025 2:03 PM To: Reaka, Bryan <bryan.reaka@wku.edu> Subject: Expedited (not expedited) Bryan, I'm sending several of the SEAS curriculum items back to their originators because they cannot go via the expedited route. Originators are the only ones who can make the change from expedited to full and have the routing reset. These are either multiple changes to a course or changing pre-reqs outside the unit. For those with pre-req changes outside the unit, they will also need to list who in the other unit (MATH) was notified and when. CIT 452 Adv D-base Admin I - reactivation of a suspended course with change in schedule type plus addition of SLOs and course outline (going to Mowafi) CS 315 Sys Admin - Title Change with new course description and SLOs (going to Galloway) CS 381 Intro Computer Networks and Security - Title Change with new SLOs (going to Galloway) CH 421 Data Struc & Algo Analysis - pre-req change outside the unit (going to Galloway) EE 473 Electromagnetics I - pre-req change outside the unit (going to Bera) Let me know if there are any questions. These should not have to go back through the SEAS process for discussion/vote, this is just a clerical correction that I cannot make myself. Best, Stuart

Key: 2338

Course Change Request

Date Submitted: 11/24/25 11:08 am

Viewing: CS 381 : Introduction to Computer Networks and Security

Last approved: 11/28/23 3:18 am

Last revision: 11/24/25 11:08 am

Changes proposed by: jff36922

Catalog Pages referencing this course

Computer Science (Univ) (CS)

School of Engineering and Applied Sciences

Proposed Action

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. 11/21/25 10:00 am Bryan Reaka (bryan.reaka): Rollback to Initiator
2. 11/21/25 12:10 pm Bryan Reaka (bryan.reaka): Approved for EAS Approval
3. 11/21/25 2:04 pm Stuart Burris (stuart.burris): Rollback to EAS Approval for SC Dean
4. 11/21/25 3:22 pm Bryan Reaka (bryan.reaka): Rollback to Initiator
5. 11/24/25 11:41 am Bryan Reaka (bryan.reaka): Approved for EAS Approval
6. 12/01/25 12:43 pm Stuart Burris (stuart.burris):

Approved for SC Dean

History

1. Sep 27, 2023 by Zhonghang Xia (zhonghang.xia)
2. Nov 28, 2023 by Zhonghang Xia (zhonghang.xia)

Active

Contact(s)

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

Review Type: Full Review ~~Expedited~~

Term for implementation: Fall 2026

Academic Level: Undergraduate

Course prefix (subject area): CS - Computer Science (Univ)

Course number: 381

Department: Engineering & Applied Sciences, School of

College: Science and Engineering

Course title

Introduction to Computer Networks and Security

Abbreviated course title: INTRo COMP NETWOrk & Security ~~INTRO TO COMPUTER NETWORKS~~

Course description

An introduction to the design and analysis of computer networks and their applications, including the basics of data communication, network topologies, protocols, routing and swtiching, naming and addressing.

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 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 290	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

Add security topics. ~~add content outline~~

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	Explain network layering structures and include security for each layer. ~~structures.~~
2	Explain OSI Network Layer Model. ~~Explain application layer protocols, including HTTP, SMTP, and DNS.~~
3	Explain application, transport, network, link layer protocols. ~~Explain the characteristics of unreliable and reliable data transfer~~
4	Develop socket programs using a high-level language. ~~Explain IP addressing;~~
5	Explain security issues at each network layer. ~~Describe socket programming using a high-level language.~~
6	Identify and explain core security principles.
7	Analyze and mitigate common security threats

Content outline

#	Topic
1	OSI model for layered networking services.
2	Application layer: Web & HTTP.
3	Application layer: SMTP.
4	Application layer: DNS.
5	Hands-on experience: i) Socket programming with a specific language, e.g., python or Java-based, ii) using network analysis tools, e.g., Wireshark, NS3, or iperf, etc, iii) using cloud facility, e.g., amazon web service (AWS).
6	Transport layer: Multiplexing and demultiplexing.
7	Transport layer: UDP protocol.

#	Topic
8	Transport layer: RDP protocol
9	. Transport layer: TCP basic.
10	Network layer: IP addressing and forwarding.
11	Network layer: IPv4.
12	Link layer: Introduction

Student expectations and requirements

Tentative texts and course materials

Special equipment, materials, or library resources needed

Additional information

Supporting documentation

Reviewer Comments

Bryan Reaka (bryan.reaka) (11/21/25 10:00 am): Rollback: Abbreviated title

Stuart Burris (stuart.burris) (11/21/25 2:04 pm): Rollback: Must go through full review due to being multiple changes to a course. Change from Expedited to Full.

Bryan Reaka (bryan.reaka) (11/21/25 3:22 pm): Rollback: From: Burris, Stuart <stuart.burris@wku.edu> Sent: Friday, November 21, 2025 2:03 PM To: Reaka, Bryan <bryan.reaka@wku.edu> Subject: Expedited (not expedited) Bryan, I'm sending several of the SEAS curriculum items back to their originators because they cannot go via the expedited route. Originators are the only ones who can make the change from expedited to full and have the routing reset. These are either multiple changes to a course or changing pre-reqs outside the unit. For those with pre-req changes outside the unit, they will also need to list who in the other unit (MATH) was notified and when. CIT 452 Adv D-base Admin I - reactivation of a suspended course with change in schedule type plus addition of SLOs and course outline (going to Mowafi) CS 315 Sys Admin - Title Change with new course description and SLOs (going to Galloway) CS 381 Intro Computer Networks and Security - Title Change with new SLOs (going to Galloway) CH 421 Data Struc & Algo Analysis - pre-req change outside the unit (going to Galloway) EE 473 Electromagnetics I - pre-req change outside the unit (going to Bera) Let me know if there are any questions. These should not have to go back through the SEAS process for discussion/vote, this is just a clerical correction that I cannot make myself. Best, Stuart

Course Change Request

Date Submitted: 11/24/25 11:15 am

Viewing: CS 421 : Data Structures and Algorithm Analysis

Last approved: 02/13/24 3:16 am

Last revision: 11/24/25 11:15 am

Changes proposed by: jff36922

Catalog Pages referencing this course

Computer Science (Univ) (CS)

School of Engineering and Applied Sciences

Proposed Action

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. 11/21/25 10:00 am Bryan Reaka (bryan.reaka): Approved for EAS Approval
2. 11/21/25 2:05 pm Stuart Burris (stuart.burris): Rollback to EAS Approval for SC Dean
3. 11/21/25 3:22 pm Bryan Reaka (bryan.reaka): Rollback to Initiator
4. 11/24/25 11:41 am Bryan Reaka (bryan.reaka): Approved for EAS Approval
5. 12/01/25 12:43 pm Stuart Burris (stuart.burris): Approved for SC Dean

History

1. Feb 13, 2024 by stc51902

Active

Contact(s)

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

Review Type: Full Review ~~Expedited~~

Term for implementation: Fall 2026

Academic Level: Undergraduate

Course prefix (subject area): CS - Computer Science (Univ)

Course number: 421

Department: Engineering & Applied Sciences, School of

College: Science and Engineering

Course title

Data Structures and Algorithm Analysis

Abbreviated course title: DATA STRUCT & ALGRTH/ANALYSIS

Course description

Important data structures, algorithms, and their applications, emphasizing algorithm analysis and general algorithmic strategies. Includes balanced search trees, hashing, priority queues, sorting, and graph algorithms.

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

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 339	C	UG		
Or		MATH 310	C	UG	)	
And		CS 331	C	UG		
And		STAT 301	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

Allow students to take MATH 310 as a prerequisite OR CS 339. ~~Add Student Learning Outcomes and Content Outlines~~

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	Describe data structures and develop and design algorithms using these data structures and analyze their solutions
2	Implement algorithm analysis.
3 ~~4~~	Describe hashing and how to handle collisions.
4 ~~5~~	Explain general algorithmic strategies such as dynamic programming and heuristic algorithms.
5 ~~6~~	Describe P, NP, and NPC classes.
6 ~~7~~	Explain select graph algorithms and their run-time analysis.

Content outline

#	Topic
1	Best, worst, and average case run-time of an algorithm
2	AVL, Red-Black, and B trees
3	Various heaps and their impact on priority queue efficiency
4	Disjoint set structure
5	Hashing
6	Analysis of sorting algorithms including insertion, quick, merge, topological sorting
7	Recurrence and Master theorem
8	Graph algorithms: single-source and all-pairs shortest path algorithms, Maximum flow algorithms.
9	Algorithmic strategies: brute force, divide-and-conquer, dynamic programming, greedy algorithm, etc.
10	P, NP, and NPC classes

Student expectations and requirements

Tentative texts and course materials

Special equipment, materials, or library resources needed

Additional information

Notified Dr. DuCloux on 11/24/2025 related to adding MATH 310 as a prerequisite to CS 421.

Supporting documentation

Reviewer Comments

Stuart Burris (stuart.burris) (11/21/25 2:05 pm): Rollback: Must go through full review due to being change in pre-req outside of the department of the course. Change from Expedited to Full.

Bryan Reaka (bryan.reaka) (11/21/25 3:22 pm): Rollback: From: Burris, Stuart <stuart.burris@wku.edu> Sent: Friday, November 21, 2025 2:03 PM To: Reaka, Bryan <bryan.reaka@wku.edu> Subject: Expedited (not expedited) Bryan, I'm sending several of the SEAS curriculum items back to their originators because they cannot go via the expedited route. Originators are the only ones who can make the change from expedited to full and have the routing reset. These are either multiple changes to a course or changing pre-reqs outside the unit. For those with pre-req changes outside the unit, they will also need to list who in the other unit (MATH) was notified and when. CIT 452 Adv D-base Admin I - reactivation of a suspended course with change in schedule type plus addition of SLOs and course outline (going to Mowafi) CS 315 Sys Admin - Title Change with new course description and SLOs (going to Galloway) CS 381 Intro Computer Networks and Security - Title Change with new SLOs (going to Galloway) CH 421 Data Struc & Algo Analysis - pre-req change outside the unit (going to Galloway) EE 473 Electromagnetics I - pre-req change outside the unit (going to Bera) Let me know if there are any questions. These should not have to go back through the SEAS process for discussion/vote, this is just a clerical correction that I cannot make myself. Best, Stuart

Key: 2365

Course Change Request

New Course Proposal

Date Submitted: 11/21/25 4:28 pm

Viewing: **CS 319 : Applied Artificial Intelligence**

Last revision: 11/21/25 4:28 pm

Changes proposed by: zhn35482

Programs referencing this course

629P, 629: Computer Science, Bachelor of Science

Proposed Action

Active

Contact(s)

Name	E-mail	Phone
Zhonghang Xia	zhonghang.xia@wku.edu	2707456459

Term for implementation: Fall 2026

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. 10/22/25 5:14 am Bryan Reaka (bryan.reaka): Rollback to Initiator
2. 11/21/25 10:00 am Bryan Reaka (bryan.reaka): Rollback to Initiator
3. 11/21/25 6:23 pm Bryan Reaka (bryan.reaka): Approved for EAS Approval
4. 12/01/25 12:43 pm Stuart Burris (stuart.burris): Approved for SC Dean

Academic Level Undergraduate

Course prefix (subject area) CS - Computer Science (Univ) Course number 319

Department Engineering & Applied Sciences, School of

College Science and Engineering

Course title
Applied Artificial Intelligence

Abbreviated course title APPL ARTIFICIAL INTELLIGENCE

Course description
Study of the fundamentals of artificial intelligence through a hands-on, project-based approach. Practical experience with AI tools and libraries to create projects in natural language processing, computer vision, recommender systems, and simple AI agents, etc.

Credit hours 3

Repeatable
Yes
Number of repeats 1
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 110102 - Artificial Intelligence.

Does this course have prerequisites

Yes

Prerequisites

And/Or	(	Course/Test Code	Min Grade/Score	Academic Level	)	Concurrency?
		CS 290	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

The demand for artificial intelligence skills is rapidly expanding across industries. This proposed course is designed to make AI education accessible and engaging by emphasizing hands-on learning through real-world projects. It will help students gain applied AI experience early in their academic careers, preparing them for internships, advanced coursework, and technology-driven careers that increasingly require AI literacy.

Is this related to other courses at WKU?

Yes

Related courses

CS 456 - Artificial Intelligence

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.

Dr. Ray J. Blankenship, Chair of Analytics & Information Systems, Gordon Ford College of Business, Oct. 16, 2025

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?

30

How many students per academic year are expected to enroll?

30

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

The estimation is based on current 300-level computer science elective courses.

How are these related?

Over the past several semesters, 300-level elective courses have averaged about 30 students. The CS program offers these electives on a rotating basis.

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	Understand what AI is and where it is applied.
2	Use AI tools and libraries to build simple applications.
3	Work with real-world datasets.
4	Build small AI-powered apps.
5	Complete a project that demonstrates creativity and teamwork

Content outline

#	Topic
1	Introduction to AI in daily life
2	Data basics for AI (numbers, text, images).

#	Topic
3	Sentiment analysis (positive/negative reviews).
4	Chatbots with rules + AI APIs.
5	Image classification with pre-trained models.
6	Fun computer vision apps.
7	Recommendation systems (basic).
8	Prediction with data.
9	AI agents

Student expectations and requirements

Tentative texts and course materials

"Dive into deep learning" Aston Zhang, et al. https://d2l.ai/

Special equipment, materials, or library resources needed

None

Additional information

None

Supporting documentation

Reviewer Comments

Bryan Reaka (bryan.reaka) (10/22/25 5:14 am): Rollback: At request of Proponent: (20251021) CS program submitted a new course proposal CS 319 last week, but we need a minor revision for this version. Can we roll back it. Thanks, Zhonghang

Bryan Reaka (bryan.reaka) (11/21/25 10:00 am): Rollback: Abbreviated title

Key: 10092

Program Change Request

Date Submitted: 11/17/25 9:27 am

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

Last approved: 05/22/24 8:06 am

Last edit: 11/17/25 9:27 am

Changes proposed by: jff36922

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

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. 11/14/25 4:19 am Bryan Reaka (bryan.reaka): Rollback to Initiator
2. 11/21/25 9:58 am Bryan Reaka (bryan.reaka): Approved for EAS Approval
3. 12/01/25 12:43 pm 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)
4. May 9, 2024 by Guangming Xing

(guangming.xing)
5. May 22, 2024 by Ryan Wilson (ryan.wilson)

Active

Contact Person

Name	Email	Phone
Jeffrey	Galloway	270-745-2859

Term of Implementation	2026-2027
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: Attain, contribute to, and advance in a fulfilling professional computing career, utilizing and continuously improving technical skills and non-technical communication, while demonstrating a commitment to ethical computing and social responsibility.

Objective 2: Effectively manage and lead complex computing initiatives, projects, and teams using adaptable leadership skills.

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: Jun 30, 2025 9:25am

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 351	Database Management Systems I	3
CS 339	Discrete Structures	3
or MATH 310	Introduction to Discrete Mathematics	
CS 360	Software Engineering I	3

CS 381	Introduction to Computer Networks	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 301	Game Programming	3
CS 315	Introduction to Unix	
CS 319	Course CS 319 Not Found	
CS 372	Mobile App Development	
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		56
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	
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
or MATH 310	Introduction to Discrete Mathematics	
CS 351	Database Management Systems I	3
CS 360	Software Engineering I	3
CS 381	Introduction to Computer Networks	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

First Year

Fall	Hours	Spring	Hours
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
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 381	3	CS 4XX Elective	3
CS 421	3	Colonnade - Local to Global	3
CS 425	3	General Elective	3
General Elective	3	General Elective	3
Colonnade - Social & Cultural	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

First Year

Fall	Hours	Spring	Hours
Fall	Hours	Spring	Hours
CS 331	3	CS 339	3
CS 325	3	CS 351	3
Colonnade - Literary Studies	3	Math Elective	3
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 381	3	CS 496	3
CS 421	3	CS Elective (CS 445 or CS 446)	3
CS 425	3	Colonnade - Local to Global	3
General Elective	3	Colonnade - Social & Cultural	3
CS Elective (CS 443 or CS 456)	3	Math/Science Elective	3
~~CS 396~~	~~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.

	List all student learning outcomes of the program.	Measurement Plan
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.

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

Are there any in-person on-campus requirements?

Does this program have experiential learning (practicum/internship/clinical)?

Does this program lead to professional licensure (excluding teaching certification)?

Library Resources

Attach library resources

Rationale for the program proposal?

Needed changes to current curriculum, remove CS 396, add CS 381 as a core course, add CS 301 as an elective to CSSA track, add CS 319 as an elective to CSSA track.

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

Bryan Reaka (bryan.reaka) (11/14/25 4:19 am): Rollback: From: Xing, Guangming <guangming.xing@wku.edu> Sent: Thursday, November 13, 2025 4:12 PM To: Galloway, Jeffrey <jeffrey.galloway@wku.edu>; Reaka, Bryan <bryan.reaka@wku.edu> Subject: Re: CS Program and Course Changes Hi Bryan, Could you please roll back the 629 program change, so that we can update. Thanks, Guangming

Key: 334

Course Change Request

New Course Proposal

Date Submitted: 10/31/25 3:34 pm

Viewing: EE 433 : AI Application in Power Systems

Last revision: 10/31/25 3:34 pm

Changes proposed by: pll96440

Programs referencing this course

537P, 537: Electrical Engineering, Bachelor of Science

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. 11/21/25 10:00 am Bryan Reaka (bryan.reaka): Approved for EAS Approval
2. 12/01/25 12:43 pm Stuart Burris (stuart.burris): Approved for SC Dean

Proposed Action

Active

Contact(s)

Name	E-mail	Phone
Pallav Kumar Bera	pallav.bera@wku.edu	2707452016

Term for implementation	Fall 2026		
Academic Level	Undergraduate		
Course prefix (subject area)	EE - Electrical Engineering	Course number	433
Department	Engineering & Applied Sciences, School of		
College	Science and Engineering		
Course title			

AI Application in Power Systems

Abbreviated course title: AI appl. power syst.

Course description

This course introduces the integration of artificial intelligence (AI) techniques in modern power systems. Students learn the fundamentals of power system fault analysis, including symmetrical and unsymmetrical faults, and perform fault simulations using PSCAD. The course also covers an introduction to Python for data handling and model development, followed by key AI and machine learning methods—classification, regression, clustering, and deep learning—applied to fault detection and classification, and grid operation.

Credit hours: 3

Repeatable

No

Default grade type: Standard Letter

Alternate grade type(s)

Is this course intended to span more than one term?

Yes

Schedule type

Applied Learning

Applied Technique

CIP Code: 144701 - Electrical and Computer Engineering.

Does this course have prerequisites

Yes

Prerequisites

And/Or	(	Course/Test Code	Min Grade/Score	Academic Level	)	Concurrency?
	(	EE 431		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
No

Reason for developing the proposed course
The growing integration of renewable energy sources, power electronics, and intelligent control has made power systems increasingly complex and data-driven. Traditional analytical methods are often inadequate to handle such nonlinear and dynamic behaviors. This course bridges the gap between conventional power system analysis and modern artificial intelligence (AI) techniques. It equips students with essential skills in fault modeling, data analysis, and machine learning applications using Python and PSCAD, preparing them for emerging research and industry trends in intelligent grid monitoring, fault diagnosis, and predictive maintenance.

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

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?
20

How many students per academic year are expected to enroll?

20

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

A special topics course (EE 499-AI Application in Power Systems) is offered in Fall 2025. Currently, 15 Electrical Engineering students have registered.

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	Understand and analyze symmetrical and unsymmetrical faults in power systems.
2	Analyze and simulate power system faults using PSCAD.
3	Use Python for data analysis and modeling.
4	Apply AI and machine learning techniques for fault detection and grid operation.
5	Evaluate and compare model performance.

Content outline

#	Topic
1	Symmetrical and unsymmetrical faults
2	Symmetrical components and fault analysis
3	Fault simulation using PSCAD
4	Introduction to Python for data analysis
5	Machine learning: classification, regression, clustering

#	Topic
6	Deep learning
7	Project and case studies

Student expectations and requirements

1. Attend and actively participate in lectures.
2. Complete all assignments and projects by the given deadlines.
3. Collaborate effectively with team members on the group project.
4. Use Python-based tools (NumPy, pandas, matplotlib, scikit-learn, TensorFlow/PyTorch).
5. Use PSCAD software.
6. Maintain academic integrity

Tentative texts and course materials

Power System Analysis and Design, SI Edition 6th Edition
Authors: J. Duncan Glover, Thomas Overbye, Mulukutla S. Sarma.
ISBN: 130563618X
Publisher: Cengage

Intro to Python for Computer Science and Data Science: Learning to Program with AI, Big Data and the Cloud
Authors: Paul Deitel, Harvey Deitel
ISBN: 0135404673
Publisher: Pearson

Special equipment, materials, or library resources needed

Python and PSCAD is needed. Students are required to have standard laptop.

Additional information

NA

Supporting documentation

EE 433_Fall_26_Syllabus proposed.pdf

Reviewer Comments

Key: 10140

Course Change Request

New Course Proposal

Date Submitted: 11/03/25 1:47 pm

Viewing: EE 455 : Applied Machine Learning for Engineers

Last revision: 11/03/25 1:47 pm

Changes proposed by: mmn62935

Programs referencing this course

537P, 537: Electrical Engineering, Bachelor of Science

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. 10/15/25 1:37 pm Mark Cambron (mark.cambron): Rollback to Initiator
2. 10/15/25 2:06 pm Mark Cambron (mark.cambron): Rollback to Initiator
3. 11/03/25 1:05 pm Mark Cambron (mark.cambron): Rollback to Initiator
4. 11/03/25 1:23 pm Mark Cambron (mark.cambron): Rollback to Initiator
5. 11/21/25 10:00 am Bryan Reaka (bryan.reaka): Approved for EAS Approval
6. 12/01/25 12:43 pm Stuart Burris (stuart.burris): Approved for SC Dean

Contact(s)

Name	E-mail	Phone
M M Nabi	mm.nabi@wku.edu	270-745-5848

Term for implementation: Fall 2026

Academic Level: Undergraduate

Course prefix (subject area): EE - Electrical Engineering

Course number: 455

Department: Engineering & Applied Sciences, School of

College: Science and Engineering

Course title

Applied Machine Learning for Engineers

Abbreviated course title: APPLIED ML FOR ENGINEERS

Course description

This course introduces the fundamental concepts and techniques of machine learning with a focus on practical implementation and engineering problem-solving. Students will learn how to preprocess data, develop and evaluate predictive models, and apply supervised and unsupervised learning algorithms using Python-based tools. Topics include regression, classification, clustering, neural networks, and model validation. The course emphasizes how machine learning can be used to design intelligent systems, optimize processes, and analyze complex sensor and signal data. Students will explore real-world engineering applications.

Credit hours: 3

Repeatable

No

Default grade type: Standard Letter

Alternate grade type(s)

Is this course intended to span more than one term?

Yes

Schedule type

Applied Learning

Applied Technique

CIP Code: 144701 - Electrical and Computer Engineering.

Does this course have prerequisites

Yes

Prerequisites

And/Or	(	Course/Test Code	Min Grade/Score	Academic Level	)	Concurrency?
	(	CS 290		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
No

Reason for developing the proposed course
Machine learning has become an essential skill in modern engineering, enabling data-driven solutions across diverse fields such as signal processing, automation, computer vision, and communication systems. Currently, the Electrical Engineering curriculum provides limited exposure to data-driven modeling and artificial intelligence concepts.

This course is designed to fill that gap by introducing students to the fundamentals of machine learning and its practical applications using Python-based tools. It will equip students with valuable computational and analytical skills that align with current industry trends and graduate research directions.

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.

10/27/25 Consulted with Artificial Intelligence and Analytics (AIA), Certificate (1783) ray.blankenship@wku.edu

10/27/25 Email sent to Data Science, Bachelor of Science (5012), alex.lebedinsky@wku.edu

11/03/25 Consulted with Data Science, Bachelor of Science (5012), lily.popova.zhuhadar@wku.edu

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?

30

How many students per academic year are expected to enroll?

30

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

A special topics course (EE 499-Intro to machine learning) is scheduled to be offered in Fall 2025. Currently, 28 Electrical Engineering students have registered. Additional enrollment from other disciplines is expected if the course receives final approval.

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	Basic understanding of linear algebra and probability.
2	Understanding supervised and unsupervised learning
3	Familiarity of different machine learning (ML) algorithms.
4	Able to visualize and process the dataset for ML algorithms
5	Develop and apply ML models in different datasets.
6	Evaluate model performance for classification and regression tasks.
7	Understanding neural networks and application of deep learning.

Content outline

#	Topic
1	Introduction and Foundations
2	Mathematical and Programming Foundations
3	Data Preparation and Preprocessing
4	Supervised Learning
5	Unsupervised Learning
6	Neural Networks and Deep Learning
7	Model Evaluation and Validation

Student expectations and requirements

1. Attend and actively participate in lectures and lab sessions.
2. Complete all assignments and projects by the given deadlines.
3. Collaborate effectively with team members on the group project.
4. Use Python-based tools (NumPy, pandas, matplotlib, scikit-learn, TensorFlow/PyTorch).
5. Maintain academic integrity

Tentative texts and course materials

Fundamentals of Machine Learning
Author: Thomas Trappenberg
ISBN: 9780198828044
https://redshelf.com/app/ecom/shelf

Machine Learning
Authors: Saikat Dutt, Subramanian Chandramouli, and Amit Kumar Das

ISBN: 9353066697
Publisher : PEARSON INDIA

Special equipment, materials, or library resources needed

Python is needed, Students are required to have standard laptop

Additional information

Supporting documentation

EE 455 Intro to ML.pdf

Reviewer Comments

Mark Cambron (mark.cambron) (10/15/25 1:37 pm): Rollback: add pre-reqs.
Mark Cambron (mark.cambron) (10/15/25 2:06 pm): Rollback: Working on details.
Mark Cambron (mark.cambron) (11/03/25 1:05 pm): Rollback: Name Change.
Mark Cambron (mark.cambron) (11/03/25 1:23 pm): Rollback: Name Change

Key: 10100

Program Change Request

Date Submitted: 10/31/25 3:49 pm

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

Last approved: 07/25/24 1:38 pm

Last edit: 10/31/25 3:49 pm

Changes proposed by: mrk43933

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

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. 10/31/25 3:46 pm Mark Cambron (mark.cambron): Rollback to Initiator
2. 11/21/25 9:57 am Bryan Reaka (bryan.reaka): Approved for EAS Approval
3. 12/01/25 12:43 pm 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)
5. May 9, 2024 by Mark Cambron (mark.cambron)
6. Jul 25, 2024 by Ryan Wilson (ryan.wilson)

Active

Contact Person

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

Term of Implementation	2026-2027
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
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 hours)

Approved Shared Content from /shared/undergraduate-major-requirements/
Last Approved: Jun 30, 2025 9:25am

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 410	Computer Design	
EE 411	Computer Design Lab	
EE 432	Power Systems II	
EE 433		
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 455	Course EE 455 Not Found	
EE 461	Discrete Control Systems	
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	
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
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 370	Applied Techniques in Mathematics	
Select one of the following Chemistry Courses		3
CHEM 116	Introduction to College Chemistry	
CHEM 120	College Chemistry I	
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
CS 180	4	PHYS 255 (E-NS)	4
College Composition (F-WC)	3	PHYS 256 (E-NS Lab)	1
		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
Human Comm (F-OC)	3	ECON 202 or ECON 203 (E-SB)	3
	16.5		16.5

Third Year

Fall	Hours	Spring	Hours
EE 345	4	EE 300	1

First Year

Fall	Hours	Spring	Hours
EE 420	3	EE 431	3.5
EE 473	3	Tech Elective I	3
MATH 307 or MATH 370	3	Writing in the Disciplines (F-WC)	3
Literary Studies (F-AH)	3	STAT 301	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

	List all student learning outcomes of the program.	Measurement Plan
		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

Are there any in-person on-campus requirements?

Does this program have experiential learning (practicum/internship/clinical)?

Does this program lead to professional licensure (excluding teaching certification)?

Library Resources

Attach library resources

Rationale for the program proposal?

Adding EE 433 and EE 455 to list of approved electives.

Additional Attachments

Additional information or attachments

Reviewer Comments

Mark Cambron (mark.cambron) (10/31/25 3:46 pm): Rollback: add new course

Key: 266

Program Change Request

Date Submitted: 10/31/25 3:35 pm

Viewing: 476 : Systems Engineering, Minor

Last approved: 05/23/24 2:51 pm

Last edit: 10/31/25 3:35 pm

Changes proposed by: mrk43933

Catalog Pages
Using this Program
Systems Engineering, Minor (476)

Proposed Action

Active

Contact Person

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

Term of Implementation 2026-2027

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. 11/21/25 9:56 am Bryan Reaka (bryan.reaka): Approved for EAS Approval
2. 12/01/25 12:43 pm Stuart Burris (stuart.burris): Approved for SC Dean

History

1. Apr 14, 2021 by Jessica Dorris (jessica.dorris)
2. May 23, 2024 by Jessica Dorris (jessica.dorris)

Program Reference Number	476
Review Type	Full Review
Academic Level	Undergraduate
Program Type	Minor
Department	Engineering & Applied Sciences, School of
College	Science and Engineering
Program Name (eg. Biology)	Systems Engineering, Minor
CIP Code	
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

Curriculum Requirements (Catalog field: Program Requirements)

Program Requirements (21-21.5 hours)

Systems engineering is a robust approach to the design, creation, and operation of systems. The minor requires at least 21.

ENGR 400	Principles of Systems Engineering	3
ENGR 491	Senior Project II	3
~~Select 9 hours from the following:~~		~~9~~
Select one of the following:		3-3.5
EE 210	Circuits & Networks I	
EM 222	Statics	
Select one of the following:		3
CE 305	Risk Analysis	
ME 310	Engineering Instrumentation and Experimentation	
STAT 301	Introductory Probability and Applied Statistics	
Select one of the following:		3

CE 303	Construction Management	
EE 460	Continuous Control Systems	
EM 313	Dynamics	
Select one of the following:		3
Any CE 400-level technical elective		
Any EE 400-level technical elective		
Any ME 400-level technical elective		
Selecton one of the following:		3
CS 405	Numerical Analysis I	
DATA 301	Big Data with its Applications	
ETM 390	Project Planning and Execution	
MFGE 390	Project Management	
Total Hours		21-21.5

CE/EE/ME technical electives:

~~CE 300~~	~~Floodplain Management~~	~~3~~
~~CE 378~~	~~Route Surveying~~	~~3~~
~~CE 379~~	~~Route Surveying Lab~~	~~1~~
~~CE 380~~	~~Boundary Surveying~~	~~3~~
~~CE 381~~	~~Boundary Surveying Lab~~	~~1~~
~~CE 383~~	~~Structural Steel Design~~	~~3~~
~~CE 384~~	~~Reinforced Concrete Design~~	~~3~~
CE 426	Advanced Construction Materials	3
CE 432	Traffic Engineering	3
CE 440	Masonry Design and Construction	3
CE 444	Bridge Engineering	3
CE 462	Hydraulic Engineering Systems	3
CE 475	Selected Topics in Civil Engineering	3
EE 410	Computer Design	3
EE 432	Power Systems II	3
EE 436	Electric Machines and Drives	3
EE 443	Microfabrication and MEMS	3
~~EE 431~~	~~Introduction to Power Systems~~	~~3.5~~
EE 445	Advanced Electronics	3

EE 450	Digital Signal Processing	3
EE 461	Discrete Control Systems	3
~~ME 49x courses taken in consultation with your advisor~~		
EE 470	Communications and Modulation	3
EE 477	Numerical Techniques in Electromagnetics	3
EE 479	Optoelectronics	3
EE 480	Embedded Systems	3
EE 499	EE Special Topics	3
ME 496	WKU – ME Selected Topics (Fall)	3
ME 497	WKU – ME Selected Topics (Spring)	3

~~The minor requires 21 hours for CE and ME majors and 22 hours for EEmajors.Students must complete 12 or 12.5 hours of required courses and choose a minimum of 9 hours from elective coursesThe technical elective must incorporate or expand on systems engineering principles as outlined inENGR 400.Technical elective courses currently meeting this intent include but are not limited to the following:~~

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	N/A	N/A

Library Resources

Attach library resources

Rationale for the program proposal?

The minor is being updated to help with paperwork for electives that have been added in the last several years.

In addition, the systems minor is adding a new requirement. Students shoud pick one of the following: CS 405, DATA 301, ETM 390 or MFGE 390. The new course will help the students with skills needed in systems.

Additional
Attachments

Additional information or attachments

Reviewer Comments

Key: 271