

AGENDA

Curriculum Committee

Date | time 09/23/2025 | 4:00PM | *Meeting called by* Heather Nelson

Members

Chair: Heather Nelson, LGM /Business | Recorder: Shelley Koone, General Education | Gary Donberger, Trades | Julie Auterson, Cosmetology | Lisa Pittman, HSW | Ex Officio: Julie Schmaltz | Ex Officio: Erin Brickley

#	Item	
1	Call to Order	
2	Past meeting minutes	
3	Old Business	
	A. Approval status of past meeting minutes.	
4	New Business	
	A. Automation Technology Program Change	Stacey McCollough
	i. Course deletion	
	ii. Course addition	
	B. Law Enforcement – Cosmetic Change	Erin Brinkley
5	Adjournment	

**Arkansas Tech University - Ozark
Curriculum Committee Meeting**

Date: September 23, 2025

Minutes

CALL TO ORDER	The Curriculum Committee (CC) met in the HSW conference room on Tuesday, September 23 at 4:00 p.m. The following members were present: Heather Nelson – Chair Shelley Koone – Recorder General Education/ Math Julie Auterson – Cosmo Gary Donberger – Trades Lisa Pittman - HSW Erin Brickley – Ex officio Julie Schmalz – Ex officio We were joined by: Stacey McCollough – Automation Technology Cody Harkness – Automation Technology
APPROVAL OF MINUTES	Heather Nelson called the meeting to order at 4:00. Minutes from the August meeting were read by Koone. Modified for clarification on the date. Motion to accept the minutes with this clarification was made by Donberger, and seconded by Auterson. Motion carried.
OLD BUSINESS	• Dr Smith approved past meeting minutes.
NEW BUSINESS	• Cosmetic changes to two Automation Technology courses. Changing the names of two courses: ○ AT 1123 changing from Semiconductors I to Industrial Electronics ○ AT 2203 changing from Computer Systems Components to Introductions to Programmable Controllers ○ Effective Spring 2026; No vote necessary. • Automation Technology Program Change presented by McCollough and Harkness. ○ Remove 1 course: AT 2213 Semiconductors II ○ Add 1 course: AT 2023 Emerging Trends in Manufacturing ○ This is done to meet industry needs based on input from industry partners. The required skills from the removed course will be absorbed into AT 1123 which is renamed above. ○ The new course, AT 2023, is interchangeable with an internship program that is being piloted with Rockline. ○ Nelson noted a correction to the documents regarding how the change affects other departments. This line should say it does not affect other departments. ○ Both classes are 3 credit hours so this will not affect the overall credit hours of the program.

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- There was some confusion on pre-requisites and scheduling which will need to be corrected in the documentation. AT 2203 is listed as a pre-req for AT 2023, but is taken after it in the program matrix. McCollough and Harkness will re-examine and fix this.
 - Koone made a motion to approve the changes to the program, second by Donberger. Motion carried.
- Committee Positions
 - Dr. Smith approved our proposal to have all terms be 3-years with staggering roll off dates. We discussed what those dates should be. The updated roll off terms are as follows.

<u>Member</u>	<u>Dept</u>	<u>Month/Yr OFF</u>
Lisa Pitman	HSW	June 2028
Gary Donberger	Trades	June 2026
Shelley Koone	Gen Ed	June 2026
Heather Nelson	Business	June 2027
Julie Auterson	Cosmo	June 2027
Ex-O: Julie Schmalz	Student Services	Permanent
Ex-O: Erin Brickley	Registrar	Permanent

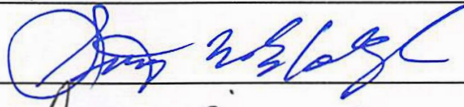
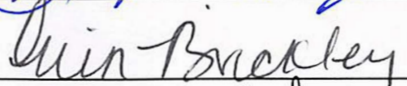
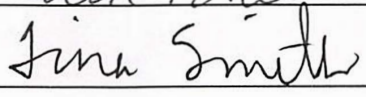
ANNOUNCEMENTS	Next meeting October 28 at 4:00 PM in HSW Conference Room
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ADJOURNMENT	Motion by Pittman, second by Auterson to adjourn the meeting. Motion carried. The meeting was adjourned at 4:39 PM.
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Arkansas Tech University – Ozark Campus

PROPOSAL FOR CHANGE IN PROGRAM

TO: Curriculum Committee
FROM: Automation Technology
DATE SUBMITTED: 09-22-2025

Title	Signature	Date
Program Chair		10-13-25
Associate Registrar		10/13/25
Vice Chancellor of Academic Affairs and Workforce Advancement		10/13/25

Program Title: Automation Technology	Effective Date: 01-01-2026
Outline change in program and attach curriculum matrix: Cosmetic Changes: • AT-1123 Semiconductors I will have a cosmetic name change to AT-1123 Industrial Electronics. • AT-2203 Computer System Components will have a cosmetic name change to AT-2203 Introduction to Programmable Controllers. Course deletion: • AT-2213 Semiconductors II will be deleted due to its critical topics being absorbed into an existing course. Course addition: • AT-2023 Emerging Trends in Manufacturing will be added. Optionally, an internship or work-study, INT-2903, may be used in place of this course.	
What impact will the change have on staffing, on other programs and space allocation? None	
Please provide a rationale for the need for this new course including the evidence derived from your program assessment. Assessment evidence may come from direct and indirect measures of student learning as well as analysis of the current state of the discipline. The new course will add knowledge and skills that are emerging for current Automation Technician graduates. The other course changes will give our graduates a competitive edge in seeking employment in the various Automation Technology fields through improved course name recognition. The option of an internship/work-study in industry will allow students to develop real-world skills in an automation manufacturing environment.	

If this course will affect other departments a Departmental Support Form for each affected department must be attached.

N/A

In the attached matrix, outline in specific detail how your proposal will alter the program (include course number and title)

Fall Start Curriculum Matrix for Catalog Curriculum in Automation Technology	
Freshman Fall Semester Add/Change: Delete: Total Hours:	Freshman Spring Semester Add/Change: AT-2203 – Computer Systems Components to AT-2203 – Introduction to Programmable Controllers AT-1123 – Semiconductors I to AT-1123 – Industrial Electronics Delete: Total Hours:
Sophomore Fall Semester Add/Change: AT-2023 – Emerging Trends in Manufacturing OPTIONAL - INT-2903 Internship / Work- Study Delete: AT-2213 – Semiconductors II Total Hours:	Sophomore Spring Semester Add/Change: Delete: Total Hours:
Junior Fall Semester Add/Change: Delete: Total Hours:	Junior Spring Semester Add/Change: Delete: Total Hours:
Senior Fall Semester Add/Change: Delete: Total Hours:	Senior Spring Semester Add/Change: Delete: Total Hours:

Spring Start (If applicable) Curriculum Matrix for Catalog Curriculum in Automation Technology	
Freshman Spring Semester Add/Change: AT-2203 – Computer Systems Components to AT-2203 – Introduction to Programmable Controllers AT-1123 – Semiconductors I to AT-1123 – Industrial Electronics Delete: Total Hours:	Freshman Fall Semester Add/Change: Delete: Total Hours:
Sophomore Spring Semester Add/Change: Delete: Total Hours:	Sophomore Fall Semester Add/Change: AT-2023 – Emerging Trends in Manufacturing OPTIONAL - INT-2903 Internship / Work-Study Delete: AT-2213 – Semiconductors II Total Hours:
Junior Spring Semester Add/Change: Delete: Total Hours:	Junior Fall Semester Add/Change: Delete: Total Hours:
Senior Spring Semester Add/Change: Delete: Total Hours:	Senior Fall Semester Add/Change: Delete: Total Hours:
Total Program Hours <u>60</u>	

Arkansas Tech University – Ozark Campus

REQUEST FOR COSMETIC COURSE CHANGES	
Course Subject: Automation Technology	Course Number: 1123
Official Title: Semiconductors I	
Request: Change the name from AT-1123 Semiconductors I to AT-1123 Industrial Electronics	
Please provide a justification as to why this change is cosmetic. The subject material taught in these courses will remain similar to the existing courses.	
Please provide a rationale for the change including the evidence derived from your program assessment that justifies this change. Assessment evidence may come from direct and indirect measures of student learning as well as analysis of the current state of the discipline. These changes are being made to better align the course name with terminology commonly used in the automation industry. This will enhance our graduates' prospects through subject recognition within the automation industry.	
If this change will affect other departments, a Departmental Support Form for each affected department must be attached.	

Approved:

Inia Smith

Signature of the Vice Chancellor of Academic
Affairs & Workforce Advancement

10/13/25

Date of Approval

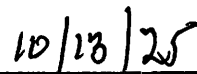
Arkansas Tech University – Ozark Campus

REQUEST FOR COSMETIC COURSE CHANGES	
Course Subject: Automation Technology	Course Number: 2203
Official Title: Computer System Components	
Request: Change the name from AT-2203 Computer System Components to AT-2203 Introduction to Programmable Controllers.	
Please provide a justification as to why this change is cosmetic. The subject material taught in these courses will remain similar to the existing courses.	
Please provide a rationale for the change including the evidence derived from your program assessment that justifies this change. Assessment evidence may come from direct and indirect measures of student learning as well as analysis of the current state of the discipline. These changes are being made to better align the course name with terminology commonly used in the automation industry. This will enhance our graduates' prospects through subject recognition within the automation industry.	
If this change will affect other departments, a Departmental Support Form for each affected department must be attached.	

Approved:



Signature of the Vice Chancellor of Academic
Affairs & Workforce Advancement

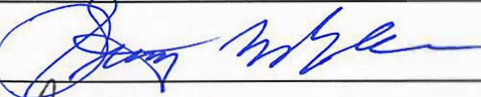
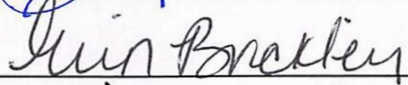
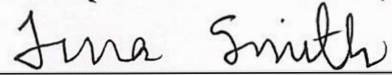


Date of Approval

Arkansas Tech University – Ozark Campus

REQUEST FOR COURSE DELETION

TO: Curriculum Committee
FROM: Automation Technology
DATE SUBMITTED: 09-22-2025

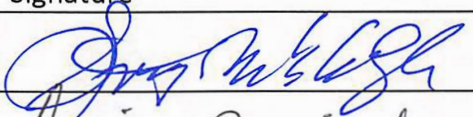
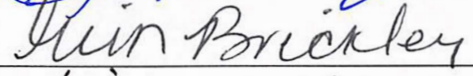
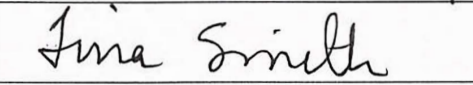
Title	Signature	Date
Program Chair		10-13-25
Associate Registrar		10/13/25
Vice Chancellor of Academic Affairs and Workforce Advancement		10/13/25

Course Subject: Automation Technology (AT)	Course Number: 2213
Cross-listed with Subject: NONE	Course Number:
If cross-listed, should cross-listing be deleted? YES / NO	
Official Title: Semiconductors II	
Effective Term: ☒ Spring ☐ Summer I ☐ Summer II ☐ Fall	
Was the course used to fulfill a major or minor requirement or used as an elective? (Check one.) ☐ Elective ☒ Major ☐ Minor	
If the course was used to fulfill a major or minor requirement, complete the Request for Program Change form.	
Please provide rationale for the request including the evidence derived from your program assessment. Assessment evidence may come from direct and indirect measures of student learning as well as analysis of the current state of the discipline. Based on information from our industry partners, we are consolidating the 2 Semiconductor classes (AT-1123 Semiconductors I & AT-2213 Semiconductors II) into a single class. The resulting course will cover critical semiconductor topics as well as other industrial electronics topics to improve our graduates' depth of knowledge and skills in this area.	
If this course will affect other departments, a Departmental Support Form for each affected department must be attached. Not applicable.	

Arkansas Tech University – Ozark Campus

REQUEST FOR COURSE ADDITION

TO: Curriculum Committee
 FROM: Automation Technology
 DATE SUBMITTED: 09-22-2025

Title	Signature	Date
Program Chair		10-13-25
Associate Registrar		10/13/25
Vice Chancellor of Academic Affairs and Workforce Advancement		10/13/25

Course Subject: AT		Course Number: 2023	
Cross-listed with Subject:		Course Number:	
Official Title (Limited to 30 characters including spaces): Emerging Trends in Manufacturing			
Mode of Instruction: (check appropriate box)			
☐ 01 Lecture	☒ 02 Lecture/Laboratory	☐ 03 Laboratory only	
☐ 06 Internship	☐ 08 Independent Study	☐ 10 Special Topics	
Effective Term: ☐ Spring ☐ Summer I ☒ Fall ☐ Summer II		If course is required by major/minor, how frequently will course be offered? ☐ Spring ☐ Summer ☒ Fall	
Is this course repeatable for additional earned hours? N How many times?			
Does this course require a fee? YES How much? \$51 Type of fee? General Technology			
☐ Elective ☒ Major ☐ Minor			
If major or minor course, you must complete the Request for Program Change form.			
Prerequisites: AT-1163 – Fundamentals of Electricity I (DC) AT-1173 – Fundamentals of Electricity I (AC) AT-2203 – Introduction to Programmable Controllers		Co-requisites:	

Grading: ☒ Standard Letter ☐ Pass/Fail ☐ Other (If other, please specify below)
For the proposed course, attach a syllabus that includes: a. Course subject, number and title b. Course description as to appear in catalog c. Course goals and/or objectives d. Course outline e. Methods of student performance assessment and evaluation f. Course bibliography, reading list, and /or listing of other instructional media
Will this course require any special resources such as unusual maintenance costs, library resources, special software, distance learning equipment, etc.? Please specify. This will be a classroom/lab course. No special requirements other than access to the computer lab, a computer, and the internet. An Amatrol subscription will be required.
Will this course require a special classroom (computer lab, smart classroom, or laboratory)? Please specify. Yes, the existing AT Automation Lab & Computer Lab will be utilized.
How does this proposal support the University Mission or University Strategic Planning Goals? Our students will gain professional knowledge requested by industry professionals and experience real-world practices and examples geared towards building the students' analytical and cognitive skills.
Please provide a rationale for the need for this new course including the evidence derived from your program assessment. Assessment evidence may come from direct and indirect measures of student learning as well as analysis of the current state of the discipline. This course covers skill areas that are not currently included elsewhere in the program, which are widely used in industrial, building, and other types of control automation. Additionally, students will be required to draw on skills developed in the first year of our Automation Technology program. This course will also enable new technology updates without requiring reconfiguration of the course.
How will the effect of the change be monitored in ongoing program assessment? Nationally recognized certifications will be utilized as a metric of course success.
If this course will affect other departments, a Departmental Support Form for each affected department must be attached. N/A



OZARK CAMPUS

Automation Technology – PROPOSED SYLLABUS

AT 2023 – Emerging Trends in Manufacturing

Fall 2026

Instructor: Cody Harkness
Office Hours: TBD
Phone: 479-508-XXXX
Email: charkness@atu.edu

Prerequisites

AT-1163 – Fundamentals of Electricity I (DC)
AT-1173 – Fundamentals of Electricity I (AC)
AT-2203 – Introduction to Programmable Controllers

Materials

Amitrol LMS 12-month subscription
Available through the ATU Ozark Bookstore - Each student needs ONE 12-month subscription for all Automation Technology courses.

1 Laptop –

Minimum Requirements:

- CPU - Intel i7 or AMD Ryzen 7
- Memory – 16 GB RAM
- Storage – 512 GB SSD
- Display – 15"
- Graphics – NVIDIA GeForce RTX 3050 or Radeon RX6600

Minimum Suggested Models:

- ASUS - TUF Gaming A16 16" 165Hz Gaming Laptop FHD-AMD Ryzen 7 7735HS with 16GB DDR5 Memory- Radeon RX7600S 512GB PCIe SSD
- GIGABYTE - 15.6" 144Hz Gaming Laptop FHD - Intel i7-12650H with 16GB RAM - NVIDIA GeForce RTX 4060 - 512GB SSD
- MSI - GF63 THIN 15.6" Gaming Laptop - Intel 11th Gen Core i7 i7-11800H - NVIDIA GeForce RTX 3050 with 16GB Memory - 512GB SSD
- ASUS ROG Zephyrus G14 14" 165Hz Gaming Laptop QHD-AMD Ryzen 7 7735HS with 16GB DDR5 Memory-NVIDIA RTX 4050 6G-512GB SSD
- HP Omen - 16.1" 144Hz Full HD Gaming Laptop - Intel Core i7 - 16GB Memory - NVIDIA GeForce RTX 4050 - 1TB SSD

Course Description/Rationale

The automation field is a rapidly changing landscape. For today's technicians to keep up, they must have solid logical, mechanical, and electrical skill sets to build on. The industry needs technicians who can troubleshoot beyond a single machine – individuals who understand continuous improvement, interactions between networked equipment, data collection and control, and modern quality/maintenance methods.

This course provides a foundation in emerging trends in automation manufacturing, including robotics, instrumentation, electrical control systems, additive manufacturing, and integration

principles. Students will also learn predictive and preventative maintenance techniques as they relate to Industry 4.0.

Course topics may change as industry needs and technologies change.

Objectives

Upon completion of this course, the student will be able to:

1. Map an Industry 4.0 architecture (device → edge → SCADA/Cloud) for a given cell and justify technology choices.
2. Configure and secure an IIoT device (sensor/gateway/PLC) on an industrial VLAN with role-appropriate credentials and logging.
3. Publish and consume live process data using OPC UA and/or MQTT, then visualize KPIs on a dashboard with calculated tags.
4. Implement a basic predictive-maintenance workflow: capture condition data (vibration/temperature), compute a health indicator, and create an alarm/notification.
5. Integrate a cobot or robot cell with safety I/O and a quality check (vision or sensor) and document the handshakes.
6. Deploy a change using DevOps-style practices: version control, backup/restore, and rollback on a PLC/HMI or edge device.
7. Assess cyber risk on a small manufacturing network and propose mitigations aligned to best practices (least privilege, segmentation, patching).
8. Evaluate ROI for an Industry 4.0 upgrade using cycle-time, scrap, downtime, and maintenance cost data; present a management-ready recommendation.

Content

The schedule listed below is tentative and is subject to change at the instructor's discretion.

What "Industry 4.0" Really Means

Cyber-physical systems, IT/OT convergence, smart factory reference models. Trace a cell's current state; identify data sources, consumers, and gaps.

Industrial Networking Basics for Techs

VLANs, QoS, managed vs. unmanaged, addressing, device hardening. Commission a managed switch; segment PLC/HMI/Engineer networks; device inventory.

IIoT Messaging: OPC UA & MQTT

Pub/sub vs. client/server, tag models, security, store-and-forward. Publish sensor tags via MQTT; subscribe and log to an edge database.

Edge Computing & Dashboards

Edge vs. Cloud, time-series data, KPIs (OEE, FPY, MTBF/MTTR). Build a live dashboard with calculated KPIs and timestamped alarms.

PLC/HMI Integration & Change Control

ISA-95 contexts, naming standards, versioning, backups.

Modify a PLC routine; HMI screen change; push to repo; backup & rollback.

Sensors for Quality & Condition Monitoring

Vibration/temperature/current signatures; sampling & filtering; thresholds.

Wire an accelerometer; compute RMS/peak; set a health score and alarm.

Predictive Maintenance Mini-Project

PdM vs. PM vs. run-to-failure; data windows, false positives. Build a simple PdM pipeline (sensor → edge compute → alert/notification).

Midterm Practical & Safety Review

Hands-on exam covering network config, data flow, and dashboarding. Safety audit of each team's setup.

Additive Manufacturing for Tooling & Jigs

DFM for AM, materials, tolerances, and traceability. Design/print a gauge or fixture; validate fit and stability in a workstation.

Cybersecurity for the Shop Floor

Attack surfaces, user roles, patching, backups, remote access policies. Baseline a cell; implement least privilege, change default creds, enable logging.

Data to Decisions

SPC basics, anomaly detection, small-data ML, ethics of automation. Build a simple model (e.g., threshold or regression) to flag drift; justify action limits.

Capstone Build Sprint

Teams implement an Industry 4.0 upgrade to a demo cell: new sensor/vision step, data pipeline, and dashboard with alarms and audit trail.

Capstone Demo & ROI Pitch

Live demo, incident/safety briefing, backup snapshot, and a 5-minute management-style ROI presentation with next-step roadmap.

Evaluation

The student's grade will be determined by class attendance & participation (25%), practical labs (25%), certification exams (25%), and a final test (25%).

Grading Scale

A - Excellent	90-100%
B - Above Average	80- 89%
C - Average	70- 79%
D - Conditional	60- 69%
F - Failing	Below 60%

Conduct

I desire every student to succeed in this course. Students are hindered in their success if there are classroom distractions. Please turn your cell phone off unless you expect an emergency call. Eating is not allowed during class time. Please do not talk unless you ask a question, have an appropriate comment, or are asked to respond. Laptops should be closed during class. If you must leave the classroom, please do so quietly. The class will begin on time so don't be late. Please do not sleep in class, or you will be asked to leave. Cheating or Plagiarism is not allowed and will result in a Failing grade for that assignment or test.

Absenteeism

Absenteeism is considered excessive when it significantly interferes with a student's learning, as reflected in academic performance. Makeup work and/or tests will be given on the first day of the course after being absent, but it is up to the student to make arrangements with the instructor for this work. Absences over 10% of the scheduled class days will lower your grade by one letter grade, and a warning that further absences may result in a failing grade for the course. Leaving early or being tardy 3 times is equal to one day absent.

Dress Code

The lab manual for each class, posted on Blackboard, will include the dress code for working in the labs.

Emergency

In case of emergency or severe weather, students will be notified and are asked to follow the emergency guidelines posted in each room.

Accessibility Needs

Arkansas Tech University-Ozark Campus values diversity and inclusion and is committed to a climate of mutual respect and full participation of all students. My goal is to create a learning environment that is useable, equitable, inclusive and welcoming. If there are aspects of the instruction or design of this course that result in barriers to your inclusion or prevent an accurate assessment of your achievement, please meet with me privately to discuss your needs and concerns. You may also contact the Student Success & Disability Services Coordinator, located in Technology & Academic Support, Suite 140, in person, via phone at (479) 508-3368, via email at ozark.accommodations@atu.edu, or visit their website at <https://www.atu.edu/ozark/ssc/> in order to initiate a request for accommodations.

Title IX Information

Gender discrimination, which includes sexual misconduct, is prohibited in educational programs, activities, and classes. Federal Title IX law and ATU policy prohibit sexual misconduct, specifically sexual harassment, domestic and dating violence, sexual assault, sexual exploitation, and stalking. Behaviors, like those described, can undermine the ability of a student to achieve academic success. If you or someone you know has experienced gender discrimination, we encourage you to seek assistance and to report the incident through resources available at <https://www.atu.edu/titleix/>. Mitzi Reano is the Deputy Title IX Coordinator for the Ozark Campus and can be reached at 479-508-3307 or via email at mreano@atu.edu. Please know that faculty are considered Responsible Employees and are not confidential under Title IX. Confidential assistance is available in Counseling Services located in the Health and Wellness Center, Doc Bryan Student Services Center Suite 119, 479-968-0329 <https://www.atu.edu/cscenter/>.

Privacy and Accessibility Policies for Third Parties

All software and services used on Arkansas Tech's server are required to provide privacy and accessibility policies. These policies can be found at https://www.atu.edu/etech/privacy_accessibility.php.