Building Trades 1—formerly Home Repair & Maintenance *(One Semester)*
This course is designed for students interested in learning about a career in the building trades. Students learn the basic information and techniques necessary to use the major tools and various building materials required for routine repair and maintenance of a residential structure and its systems, including exterior and interior walls, roofs, windows, plumbing, masonry, and insulation. Students will work independently, in a large group, and/or in pairs while going through individual units of study throughout this course. Safety Glasses are required.

Building Trades 2 *(One Semester)* Prerequisite: Building Trades 1/Home Repair
This course is a continuation of Building Trades 1 (formerly Home Repair and Maintenance). Students will advance their skills in several areas of building trades, including blueprint reading & implementation, floor framing, concrete & masonry work, roof framing, and steel construction. Students will apply knowledge and skills learned in the previous course and build upon those as well as learn new higher level skills to accomplish designated projects. Students will also have the opportunity to earn OHSA 10 Certification. Safety glasses are required for this course. ***COD Dual Credit option pending through the College of DuPage.***

Architectural Drafting *(One Semester)*
This course will explore the options, careers, education and skills related to architecture and building construction. It will focus primarily on residential design and the required drawings for constructing buildings. Topics include building codes, construction plans, room layouts, roofing, etc. Students learn CAD Drafting software and modeling with balsa wood and foam core board.

Computer Aided Drafting 1 *(One Semester)*
Students will learn to use the computer as a drafting and design tool. The basics of machine drawing and design are explored with an introduction and utilization of AutoCAD software. Units covered will include isometric drawings, perspective, exploded views, and different types of rendering and 3-D Modeling. Mastery of AutoCAD skills can prove to be very valuable in a variety of career fields including engineering, construction, and manufacturing. ***Earn College of DuPage credit in the Dual Credit program.***

Computer Aided Drafting 2 *(One Semester)*
Prerequisite: CAD 1
In this course the student expands and improves their CAD skills working with Inventor software. In addition, the course is to acquaint the student with a basic fundamental knowledge of manufacturing and engineering processes, manufacturing basics, and learn different engineering and manufacturing careers.

Manufacturing Technology *(Full Year)*
This course consists of an in-depth study of how people convert raw materials into useful usable products. Students will design, build and test their products. This course will also focus on manipulative skills in the safe and proper use of industrial manufacturing machines, (metal – milling, computer CAD/CAM, (computer assisted machining), drill press, lathe, welding, etc.) Safety glasses required. ***Earn College of DuPage credit in the Dual Credit program.***

Advanced Manufacturing Technology *(Full Year)*
Prerequisite: Manufacturing Technology Students will build on knowledge and skills acquired in the Manufacturing Technology course and focus on more advanced skills associated with various manufacturing processes such as, metals, drill press, lathe, welding, etc. ***Earn College of DuPage credit in the Dual Credit program.***

Science & Technology

Computer Repair—Servicing *(One Semester)*
This course is designed to equip beginner and semi-experiences students with entry-level computer technician proficiencies. The course follows CompTia A+ Certification objectives for computer hardware. Students will become proficient with computer hardware components including the motherboard, processor, memory, drives, power supplies, and other devices. This course follows industry recognized curriculum and is strongly recommended for students who have an interest in pursuing Computer Servicing and Technology as a career or as a computer enthusiast. ***Earn College of DuPage credit in the Dual Credit program—Pending.***

Principles of Technology *(Full Year)*
Prerequisite: Algebra This course is designed to acquaint the student with the physical laws of science as they apply to the technological world. Mechanical, fluid, electrical and thermal systems are studied through a laboratory approach that requires data recording and analysis. This course will be useful to those students who are planning on pursuing a career in engineering or in a technical field.

Technology Survey I *(One Semester)*
As the name implies this course allows a student to explore a variety of technical skill areas that they may know little about, and it provides a wide range of student activities related to all areas of technology and engineering education in the areas of: Woodworking, Technical Drawing & CAD, STEM (Science Technology Engineering and Mathematics), Automotive Service and Maintenance, and Small EnginesIt is primarily a hands-on lab activity class with discussions to reinforce student learning. Safety glasses are required and may be purchased at registration for approximately $5.00.

Career and Technical Education Department

Addison Trail H.S. CTE FACS • Business • I&T

Dual Credit
Internships
Industry Certifications
Field Trips
Guest Speakers
Honors Options
Student Activities
(BPA, DECA, FCCLA, SkillsUSA)

Industry & Technology

Career Pathways
Automotive
Graphic Communication
Construction & Trades
Science & Technology

Instructors
Mrs. Juliann Boudouris, Dept. Chair
Mr. Jeff Angle
Mr. Tim Hockensmith
Mr. Keith Santini

CTE—I&T Curriculum

Career Pathway	Course	Dual Credit	Industry Certification
Automotive	Automotive Technology 1		
	Automotive Technology 2	X	
	Automotive Technology 3		X
	Automotive Technology 4	X	X
	Automotive Technology 5		X
Graphic Communications	Photography 1	X	Honors Option
	Photography 2	X	Honors Option
Construction & Trades	Woods 1		
	Woods 2		X
	Advanced Woods		X
	Building Trades 1 (formerly Home Repair)		
	Building Trades 2		X
	Architectural CAD		
	CAD 1 & 2 (Mechanical)	X	Honors Option—2
	Manufacturing Technology	X	
	Advanced Manufacturing Technology	X	
Science Technology	Computer Repair—Servicing		
	Principles of Technology		
	Tech. Survey 1		

Automotive Technology

Automotive Technology 1 *(Full Year)*

This course consists of an in depth study of the following vehicle systems: engine mechanical, electrical, starting and charging. The students will learn about the modern parts, operation, diagnosis and repair of the system. Modern tools and diagnostic procedures will be stressed. The student will work toward developing mechanical skills, technical knowledge, and manipulative operations necessary for entry-level employment in the automotive field. Safety glasses and coveralls required.

Automotive Technology 2 *(Full Year)* **Prerequisites: AutoTech 1**
This course consists of an in depth study of the following vehicle systems: tires, braking, fuel, and computerized engine performance. The students will learn about the modern parts, operation, diagnosis, troubleshooting, and repair of the system using modern tools and diagnostic procedures along with analyzers and scanners. Work geared toward entry-level employment. ***Earn College of DuPage credit in the Dual Credit program.***

Automotive Technology 3 *(Full Year)* **Prerequisite: Automotive Technology 2**

This course consists of an in depth study of a variety of vehicle systems including but not limited to: air conditioning, manual transmissions and driveline, automatic transmissions, and electrical systems. Modern tools and diagnostic procedures will be stressed. Student's work toward developing mechanical skills, technical knowledge, and manipulative operations necessary for entry-level employment in the automotive field. Most units resemble a job-shop situation where students are working on live vehicles that are currently being driven on the road. **Industry certification opportunity available.**

Automotive Technology 4 *(Full Year)* **Prerequisite: Automotive Technology 1 & 2**

This course is an in-depth study of steering, suspension and alignment on today's modern automobile. Customer service and customer interaction are also covered and put into practice during this course. Students will be required to diagnose steering, suspension and alignment problems, quote the repair to the customer and then complete the repair. ***Earn College of DuPage credit in the Dual Credit program.*** **Industry certification opportunity available.**

Automotive Technology 5 *(Full Year)* **Prerequisite: Automotive Technology 1, 2, 3 and 4** This course is an in-depth study of the vehicle emission system and hybrid vehicles. Students spend time working on practicing diagnosis of vehicle engine performance and emission failures along with electrical diagnosis. Students will be required to diagnose quote the repair to the customer and then complete the repair. **Industry certification opportunity available.**

Graphic Communication

Photography 1 *(One Semester)*

In this introductory course students will learn basic photographic processes–including black and white film and digital photography. Course covers the technical areas of photography, focuses on the proper practices and techniques as they apply to taking and printing photos. Topics include: history of photography, camera types, light, lenses, camera handling, film, composition, filters and color. Focus is also on camera operation, film processing, printmaking and presentation. Students investigate the use of photography for communication as well as Adobe Photoshop to edit, process, and print professional photographs. ***Earn College of DuPage credit in the Dual Credit program.***

Photography 2 *(One Semester)* Prerequisite: Photography 1
This is an advanced level course that will expand the student's knowledge and skill with the photographic medium, also utilizing black and white and digital photography techniques. Students will use printmaking techniques, the use of different films and papers, work with studio and commercial lighting, proper techniques for flash photography, and use of Adv. Adobe Photoshop. Students will employ a more extensive manipulation of images and alternative process techniques. ***Earn College of DuPage credit in the Dual Credit program.***

Construction & Trades

Woods 1 *(One Semester)*

This course introduces students to basic woodworking. Students learn to properly operate and maintain woodworking tools and machines, identify types of wood, and the characteristics of the wood while completing basic projects. This is a hands-on lab course where students learn through demos and project based activities. There is an opportunity to earn certification through the WCA. Students learn and improve skills in safety, organization, basic math, project planning, and reading developing a foundation for advanced woods, careers in the building trades, and/or an intro to a rewarding hobby. Safety glasses are required. **Industry certification opportunity available.**

Woods 2 *(One Semester)* Prerequisite: Woods 1
This course is a continuation of Woods 1 where students will enhance their woodworking skills by creating more complex projects that require them to follow proper project planning guidelines, safety procedures, machine operation techniques, and finishing techniques. Students will continue earning certification through the Woodworkers Career Alliance. This is primarily a hands-on lab activity course with projects to reinforce student learning. Safety glasses are required. **Industry certification opportunity available.**

Advanced Woods S1 *(First Semester Only)* **Advanced Woods S2** *(Second Semester Only) Register for both for a Full Year* Prerequisite: Woods 2
In this course, students will enhance their woodworking skills by focusing on the production part of woodworking, learning how to design and create projects to be mass produced. Students will learn the need for creating a prototype and then making jigs and fixtures to make the process more efficient by following proper project planning guidelines, safety procedures, machine operation, and finishing techniques. Students continue earning certification on specific machines. Students will work on teacher approved projects throughout the semester/year. Safety glasses are required. **Industry certification opportunity available.**