

# Engineering

## Curriculum Plan 2022-2023

Area of Concentration: F6

CTSO: SkillsUSA

### Program Courses

EMIS Course Code	Course Name	Grade	Is this course a CTAG?
175001	Engineering Design	10	Yes
175002	Engineering Principles	11	No
175105	DC Circuits	11	Yes
175006	Computer Integrated Mfg	12	Yes
175009	Engineering Capstone	12	N/A

### Industry Credentials/Certifications

Industry Credentials Offered	ODE Points Available	Completed during Grade
SolidWorks Associate	4	
AutoDesk Inventor Certified User	4	
OSHA 10	1	

### College Credit Opportunities

Course Name	College	Credit Hours	Completed during Grade
CTEGT002 Engineering Graphics	CTAG	3	10
CTEET001 DC Circuits	CTAG	3	11
CTMET005 CADD	CTAG	3	12

### Work-Based Learning Opportunities

On the job placement opportunities	
CTSO competitions	

### Tasks

<ul style="list-style-type: none"> <li>• Maintain electronic equipment.</li> <li>• Test performance of electrical, electronic, mechanical, or integrated systems or equipment.</li> <li>• Review technical documents to plan work.</li> <li>• Install instrumentation or electronic equipment or systems.</li> <li>• Confer with other personnel to resolve design or operational problems.</li> <li>• Resolve operational performance problems.</li> <li>• Create electrical schematics.</li> <li>• Assemble equipment or components.</li> <li>• Evaluate designs or specifications to ensure quality.</li> <li>• Interpret design or operational test results.</li> <li>• Maintain operational records or records systems.</li> <li>• Select tools, equipment, or technologies for use in operations or projects.</li> <li>• Estimate technical or resource requirements for development or production projects.</li> <li>• Direct industrial production activities.</li> <li>• Direct installation activities.</li> <li>• Document technical design details.</li> <li>• Estimate operational costs.</li> <li>• Prepare project budgets.</li> <li>• Train personnel on proper operational procedures.</li> <li>• Design electrical equipment or systems.</li> <li>• Operate computer systems.</li> <li>• Purchase materials, equipment, or other resources.</li> <li>• Update technical knowledge.</li> <li>• Advise customers on the use of products or services.</li> </ul>
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- Direct quality control activities.
- Create schematic drawings for electronics.
- Analyze costs and benefits of proposed designs or projects.
- Determine operational criteria or specifications.
- Evaluate characteristics of equipment or systems.
- Test green technologies or processes.

## Engineering Technology Program of Study

**Aligned with Sinclair – Engineering and Engineering Technology University  
Transfer (UD) ESUP.S.AS**

<b>Secondary</b>	9	English 9	Algebra I or Geometry	Physical Science	World History	PE/PE	Health/ Career Exploration	Elective
	10	English 10	Geometry or Algebra II	Biology	U.S. History	Elective	<b>Engineering Design 175001</b>	
	11	English 11	Algebra II or Pre-Calculus	Chemistry or Environmental Science	American Government	Elective	<b>Engineering Principles 175002</b>	<b>DC Circuits 175105</b>
	12	English 12	Adv Math	Elective	Elective	Elective	<b>Computer Integrated Manufacturing 175006</b>	Engineering Capstone 175009

<b>Post-Secondary</b>	Fall Year 1	MAT 2270 Calc & Analytic Geo I	ENG 1101 English Comp I	CHE 1211 General Chemistry I	CHEM 1251 Lab for General Chemistry I	HIS 1112 Western Civ II
	Spring Year 1	MAT 2280 Calc & Analytic Geo II	PHY 2201 General Physics I	PHY 2207 Lab for General Physics I	PLS 1120 American Fed Govt	PHI 2205 Intro to Philosophy
	Fall Year 2	MAT 2290 Calc & Analytic Geo II	PHY 2202 General Physics II	PHY 2208 Lab for General Physics II	PHY 2210 MATLAB for Sci & Engineers	MEE 2101 Statics for Engineers
	Spring Year 2	MAT 2310 Elem Diff Eqns	MET 1301 Solidworks Basics	MEE 2201 Thermodynamics for Engr	COM 2211 Effective Public Speaking	ECO 2180 Microeconomics
	Summer Year 2	ENG 1201 English Comp II	REL 1112 Western Religions	MET 1161 Software Tools for ET	MEE 2301 Strength of Materials Egr	MEE 2401 Dynamics for Engineers

<b>Key</b>	Required Course	Recommended Elective Courses	High School Career- Technical Courses <b>Bold =College Credit Opportunity</b>
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