

2023 – 2024 STEM Cluster Sequence of Courses

Pathway: Engineering and Technology

State Program		1	2	3	4	CIP & SOC Suggestions
SC0026005 Aerospace Program 480 hours OCAS 9879	Pilot 480 hours	Aviation I OCAS 8874 120 hours Launching into Aviation Exploring Aviation & Aerospace	Aviation II OCAS 8875 120 hours Introduction to Flight Aircraft Systems Performance	Aviation III – Pilot OCAS 8876 120 hours The Flying Environment Flight Planning	STEM Capstone or Aerospace Capstone OCAS 8705 or 8883 120 hours Preflight Your Career Pilot Capstone	CIP: 36.0202 - Aircraft Pilot (Private) SOC: 99-9999 - No Match Additional Courses: 8883 Aerospace Capstone or 8877 Aviation IV
SC0026006 Aerospace Program - Advanced 960 - 1440 hours OCAS 9879 & 9880	Unmanned Aircraft Systems 480 hours	Aviation I OCAS 8874 120 hours Launching into Aviation Exploring Aviation & Aerospace	Aviation II OCAS 8875 120 hours Introduction to Flight Aircraft Systems and Performance	Aviation III – UAS or Aviation IV OCAS 8876 or OCAS 8877 120 hours The Flying Environment UAS Operations	STEM Capstone or Aerospace Capstone OCAS 8705 or 8883 120 hours A World of UAS UAS Capstone	CIP: 36.0207 - Remote Aircraft Pilot SOC: 99-9999 - No Match Additional Courses: 8883 Aerospace Capstone or 8877 Aviation IV
	General Aviation Maintenance 480 hours	Applied Sciences of Aircraft Maintenance OCAS 8886 120 hours	Basic Electricity OCAS 8887 120 hours	Aircraft Materials and Corrosion Control OCAS 8885 120 hours	Aerospace Capstone OCAS 8883 120 hours	CIP:15.0801- Aeronautical/Aerospace Engineering Technology/Technician SOC:17-3021- Aerospace Engineering and Operations Technicians Or CIP: 47.0607-Airframe Mechanics and Aircraft Maintenance Tech/Technician SOC: 49-3011.00 –Aircraft Structure, Surfaces, Riggins, and Systems Assemblers

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State Program		1	2	3	4	5	6	7	8	9	CIP and SOC Suggestion
SC0026009 Computer Science Program 480 hours OCAS 9874	Computer Science 1080 hours	AP CS Principles OCAS 8851 120 hours	College Prep Math Year 1 120 hours	College Prep Lab Science Year 1 120 hours	AP Computer Science A (CSA) OCAS 8853 120 hours	College Prep Math Year 2 120 hours	College Prep Lab Science Year 2 120 hours	College Prep Math Year 3 120 hours	College Prep Lab Science Year 3 120 hours	Cybersecurity OCAS 8861 120 hours	CIP: 11.0201 Computer Programming/Programmer, General SOC: 15-1251.00 - Computer Programmers
SC0026002 Computer Science Program – Advanced 960 - 1440 hours OCAS 9874 & 9875	Computer Science 960 hours	AP CS Principles OCAS 8851 120 hours	College Prep Math Year 1 120 hours	College Prep Lab Science Year 1 120 hours	AP Computer Science A (CSA) OCAS 8853 120 hours	College Prep Math Year 2 120 hours	College Prep Lab Science Year 2 120 hours	Cybersecurity OCAS 8861 or Adv Programming OCAS 8160 120 hours	STEM Capstone OCAS 8705 120 hours	CIP: 11.0201 Computer Programming/Programmer, General SOC: 15-1251.00 - Computer Programmers	
	Programming 720 hours	CS Discoveries OCAS 8867 120 hours	AP CS Principles OCAS 8851 120 hours	AP Computer Science A (CSA) OCAS 8853 120 hours	Advanced Programming OCAS 8160 120 hours	Python OCAS 8871 120 hours	STEM Capstone OCAS 8705 120 hours	CIP: 11.0201 Computer Programming/Programmer, General SOC: 15-1251.00 - Computer Programmers			
	Intro to CS 480 hours	CS Discoveries OCAS 8867 120 hours	AP CS Principles OCAS 8851 120 hours	AP Computer Science A (CSA) OCAS 8853 120 hours	STEM Capstone OCAS 8705 120 hours	CIP: 11.0201 Computer Programming/Programmer, General SOC: 15-1251.00 - Computer Programmers					

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State Program		1	2	3	CIP and SOC Suggestions
SC0026004 Robotics Engineering Program	OCAS 9878 Robotics 360 hours	Robotics Engineering OCAS 8833 120 hours	Advanced Robotics Engineering OCAS 8866 120 hours	STEM Capstone OCAS 8705 120 hours	CIP: 15.0405 Robotics Technology/Technician SOC: 17-3024.01 – Robotics Technicians

Pathway: Engineering and Technology				CareerTech Approved College Prep Mathematics and Science Courses					
OCAS	Math	OCAS	Math	OCAS	Science	OCAS	Science		
4830	Advanced Studies in Math I	4760	AP Statistics	5055	AP Chemistry	5211	Physics I		
4831	Advanced Studies in Math II	4612	Calculus	5121	AP Environmental	5212	Physics II		
4412	Algebra II	4520	Geometry	5213	AP Physics 2: Algebra-Based				
4413	Algebra III	4611	Pre-Calculus (60 or 120 hours)	5216	AP Physics C: Mechanics				
4615	AP Calculus AB	4614	AP Pre-Calculus	5217	AP Physics C: Electricity and Magnetism				
4616	AP Calculus BC	4740	Statistics & Probability	5051	Chemistry I				
		4750	Trigonometry (60 hours)						

Pathway: Engineering and Technology													
State Program		1	2	3	4	5	6	7	8	9	10	11	12
SC0016001 Pre-Engineering Program 480 hours	Pre-Engineering -Adv 1440 hours	PLTW IED OCAS 8709 120 hours	College Prep Math Year 1 120 hours	College Prep Lab Science Year 1 120 hours	PLTW POE OCAS 8710 120 hours	PLTW - Engineering Specialty Course	College Prep Math Year 2 120 hours	College Prep Lab Science Year 2 120 hours	PLTW - Engineering Specialty Course	PLTW - Engineering Specialty Course	College Prep Math Year 3 120 hours	College Prep Lab Science Year 3 120 hours	*PLTW EDD OCAS 8716 - 120 hours
	Pre-Engineering - Adv 960 hours	PLTW IED OCAS 8709 120 hours	College Prep Math Year 1 120 hours	College Prep Lab Science Year 1 120 hours	PLTW POE OCAS 8710 120 hours	PLTW - Engineering Specialty Course	College Prep Math Year 2 120 hours	College Prep Lab Science Year 2 120 hours	*PLTW EDD OCAS 8716 120 hours	*PLTW Capstone or PLTW Specialty Course	CIP and SOC Suggestions CIP: 14.0101 - Engineering, General SOC: 17-2199.00 - Engineers, All Others Or CIP: 14.0102 Pre-Engineering SOC: 99-9999 No Match		
	PLTW Engineering Specialty Courses	Digital Electronics OCAS 8711 120 hours		Computer Integrated Manufacturing OCAS 8712 120 hours		Civil Engineering & Architecture OCAS 8713 120 hours		Environmental Sustainability OCAS 8854 120 hours		Aerospace Engineering OCAS 8715 120 hours		AP Computer Science OCAS 8851 120 hours	
SC0026010 Pre-Engineering Program – Advanced 960 – 1440 hours OCAS 9862 & 9871	Engineering byDesign 720 hours	Technology Foundations OCAS 8828 120 hours		Technology and Society OCAS 8847 120 hours		Technological Design OCAS 8848 120 hours		Advanced Design Applications OCAS 8826 120 hours		Advanced Technological Applications OCAS 8825 120 hours	STEM Capstone OCAS 8705 120 hours	CIP & SOC Suggestions CIP: 14.0103 - Applied Engineering SOC: 17-2199 Engineers, All Other	
	SREB Integrated Production Technology 480 hours	Advanced Technology for Design and Production OCAS 8862 120 hours		Systems of Advanced Technology OCAS 8863 120 hours		Mechatronic Systems for Advanced Production OCAS 8864 120 hours		Design for the Production of Advanced Products OCAS 8865 120 hours		CIP: 15.0001 - Applied Engineering Technologies/Technicians SOC: 17-3024 Electro-Mechanical and Mechatronics Technologists and Technicians			
	SREB Innovations in Science & Technology 480 hours	Nature of Science and Technology OCAS 8855 120 hours		Core Applications of Science and Technology OCAS 8856 120 hours		Impacts of Science & Technology OCAS 8857 120 hours		Creativity & Innovations OCAS 8858 120 hours		CIP: 14.0103 - Applied Engineering SOC: 17-2199 Engineers, All Other			
	Applied Engineer 480 hours	Mechanical Design Engineering OCAS 8879 120 hours		Advanced Mechanical Design Engineering OCAS 8882 120 hours		Advanced Design Applications OCAS 8826 120 hours		STEM Capstone OCAS 8705 120 hours		CIP: 14.0103 - Applied Engineering SOC: 17-2199 Engineers, All Other			

