

2025 – 2026 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 SC0026006 Aerospace Program - Advanced 960 hours OCAS 9879 & 9880 | Pilot 480 hours | 8874 Aviation I 120 hours Launching into Aviation Exploring Aviation & Aerospace | 8875 Aviation II 120 hours Introduction to Flight Aircraft Systems Performance | 8876 Aviation III – Pilot 5010 Aeronautics 120 hours The Flying Environment Flight Planning | 8705 STEM Capstone 8883 Aerospace Capstone 120 hours Preflight Your Career Pilot Capstone | CIP: 36.0202 - Aircraft Pilot (Private) SOC: 99-9999 - No Match Other Course: 8877 Aviation IV |
| | Unmanned Aircraft Systems 480 hours | 8874 Aviation I 120 hours Launching into Aviation Exploring Aviation & Aerospace | 8875 Aviation II 120 hours Introduction to Flight Aircraft Systems & Performance | 8876 Aviation III – UAS 5010 Aeronautics 120 hours The Flying Environment UAS Operations | 8705 STEM Capstone 8883 Aerospace Capstone 120 hours A World of UAS UAS Capstone | CIP: 36.0207 - Remote Aircraft Pilot SOC: 99-9999 - No Match Other Courses: 8877 Aviation IV |
| | General Aviation Maintenance 480 hours | 8886 Applied Sciences of Aircraft Maintenance 120 hours | 8887 Basic Electricity 120 hours | 8885 Aircraft Materials and Corrosion Control 120 hours | 8883 Aerospace Capstone 8990 Work-Based Learning I – STEM 8721 STEM Internship 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 |

Pathway: Engineering and Technology

| State Program | | 1 | 2 | 3 | 4 | 5 | 6 | 7-9 | 10-12 |
|--|--------------------------------|------------------------------------|---|---|---|---|---|--|---|
| SC0026009 Computer Science Program 480 hours OCAS 9874 | Computer Science 1440 hours | 2536 AP CS Principles 120 hours | 2535 AP Computer Science A 120 hours | 8160 Advanced Programming 120 hours | 8871 Python 120 hours | 8861 PLTW Cybersecurity 8256 Cybersecurity Basics 120 hours | 8705 STEM Capstone 8716 PLTW Capstone 120 hours | College Prep Math Year 1-3 360 hours | College Prep Lab Science Year 1-3 360 hours |
| SC0026002 Computer Science Program – Adv 960 hours OCAS 9874 & 9875 | Computer Science 960 hours | 2536 AP CS Principles 120 hours | 2535 AP Computer Science A 120 hours | 8861 PLTW Cybersecurity 8256 Cybersecurity Basics 8160 Adv Programming 120 hours | 8705 STEM Capstone 8716 PLTW Capstone 120 hours | College Prep Math Year 1-2 240 hours | College Prep Lab Science Year 1-2 240 hours | CIP and SOC Suggestions CIP: 11.0201 Computer Programming/Programmer, General SOC: 15-1251.00 - Computer Programmers | |
| | Programming 960 hours | 8867 CS Discoveries 120 hours | 2536 AP CS Principles 120 hours | 2535 AP Computer Science A 120 hours | 8160 Advanced Programming 120 hours | 8871 Python 120 hours | 8861 PLTW Cybersecurity 8256 Cybersecurity Basics 120 hours | | |
| SC0026013 CS Academy 1440 hours OCAS 9874, 9875, 9851 | Intro to CS 480 hours | 8867 CS Discoveries 120 hours | 2536 AP CS Principles 120 hours | 2535 AP Computer Science A 120 hours | STEM Capstone OCAS 8705 120 hours | | | | |

Pathway: Engineering and Technology

| State Program | | 1 | 2 | 3 | 4 | CIP and SOC Suggestions |
|---|------------------------------------|--|--|---|---|---|
| SC0026004 Robotics Engineering Program | OCAS 9878 Robotics 480 hours | 8833 Robotics Engineering 120 hours | 8160 Advanced Programming 120 hours | 8866 Advanced Robotics Engineering 120 hours | 8705 STEM Capstone 8721 STEM Internship 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 | 5051 | Chemistry I |
| 4831 | Advanced Studies in Math II | 4612 | Calculus | 5121 | AP Environmental | 5211 | Physics I |
| 4412 | Algebra II | 4520 | Geometry | 5213 | AP Physics 1: Algebra-Based | 5212 | Physics II |
| 4413 | Algebra III | 4611 | Pre-Calculus (60 or 120 hours) | 5214 | AP Physics 2: Algebra-Based | | |
| 4615 | AP Calculus AB | 4614 | AP Pre-Calculus | 5216 | AP Physics C: Mechanics | | |
| 4616 | AP Calculus BC | 4740 | Statistics & Probability | 5217 | AP Physics C: Electricity and Magnetism | | |
| | | 4750 | Trigonometry (60 hours) | | | | |

| Pathway: Engineering and Technology | | | | | | | | | |
|--|---|---|---|---|--|---|---|--|---|
| State Program | | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
| SC0016001 Pre-Engineering Program 480 hours OCAS 9862 | Pre-Engineering - Adv 1440 hours | 8878 Engineering Essentials 120 hours | 8709 PLTW IED 120 hours | 8710 PLTW POE 120 hours | PLTW - Engineering Specialty Course 120 hours | PLTW - Engineering Specialty Course 120 hours | 8716 PLTW Capstone 120 hours | College Prep Math Year 1-3 360 hours | College Prep Lab Science Year 1-3 360 hours |
| | Pre-Engineering - Adv 960 hours | 8878 Engineering Essentials 120 hours | 8709 PLTW IED 120 hours | 8710 PLTW POE 120 hours | 8716 PLTW Capstone 120 hours | College Prep Math Year 1-2 240 hours | College Prep Lab Science Year 1-2 240 hours | CIP and SOC Suggestions | |
| | Pre-Engineering - Adv 480 hours | 8878 Engineering Essentials 120 hours | 8709 PLTW IED 120 hours | 8710 PLTW POE 120 hours | 8716 PLTW Capstone 120 hours | 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 | | | | | | | | |
| SC0026010 Pre-Engineering Program – Adv 960 hours OCAS 9862 & 9871 | | 8711 Digital Electronics 120 hours | 8712 Computer Integrated Manufacturing 120 hours | | 8713 Civil Engineering & Architecture 120 hours | | 8854 Environmental Sustainability 120 hours | 8715 Aerospace Engineering 120 hours | |
| SC0026014 Pre-Engineering Program – Advanced 1440 hours OCAS 9862, 9871, 9853 | SREB Integrated Production Technology 480 hours | 8862 Advanced Technology for Design and Production 120 hours | | 8863 Systems of Advanced Technology hours 120 | | 8864 Mechatronic Systems for Advanced Production 120 hours | | 8865 Design for the Production of Advanced Products 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 | 8855 Nature of Science and Technology 120 hours | | 8856 Core Applications of Science and Technology 120 hours | | 8857 Impacts of Science & Technology 120 hours | | 8858 Creativity & Innovations 120 hours | CIP: 14.0103 - Applied Engineering SOC: 17-2199 Engineers, All Other |
| | Applied Engineer 480 hours | 8879 Mechanical Design Engineering 120 hours | | 8882 Advanced Mechanical Design Engineering 120 hours | | 8826 Advanced Design Applications 120 hours | | 8705 STEM Capstone 8721 STEM Internship 8990 Work-Based Learning I - STEM 120 hours | CIP: 14.0103 - Applied Engineering SOC: 17-2199 Engineers, All Other |

| Pathway: Science and Mathematics | | | | 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 | 5333 | Anatomy & Physiology (120 hrs.) | 5336 | Microbiology |
| 4831 | Advanced Studies in Math II | 4612 | Calculus | 5035 | AP Biology | | |
| 4412 | Algebra II | 4520 | Geometry | 5055 | AP Chemistry | | |
| 4413 | Algebra III | 4611 | Pre-Calculus (60 or 120 hours) | 5121 | AP Environmental | | |
| 4615 | AP Calculus AB | 4614 | AP Pre-Calculus | 5051 | Chemistry I | | |
| 4616 | AP Calculus BC | 4740 | Statistics & Probability | 5333 | Physiology (60) or Anatomy (60) | | |
| | | 4750 | Trigonometry (60 hours) | | | | |

| State Program | | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
|--|----------------------------------|---|--|---|---|---|--|---|
| SC0026000 Biomedical Science and Medicine 480 hours OCAS 9852 SC0026007 Biomedical Science and Medicine Advanced 960 hours OCAS 9852 & 9870 SC0026012 Biomedical Science and Medicine Academy 1440 hours OCAS 9852, 9870, 9854 | Biomedical Science 1440 hours | 8706 PLTW Principles of Bio Science 120 hours | 8707 PLTW Human Body Systems 120 hours | 8708 PLTW Medical Interventions 120 hours | 8719 PLTW Biomedical Innovation 120 hours | 8716 PLTW Capstone | College Prep Math Years 1-3 360 hours | College Prep Lab Science Year 1-3 360 hours |
| | Biomedical Science 960 hours | 8706 PLTW Principles of Bio Science 120 hours | 8707 PLTW Human Body Systems 120 hours | 8708 PLTW Medical Interventions 120 hours | 8719 PLTW Biomedical Innovation 120 hours | 8716 PLTW Capstone | College Prep Math Years 1- 2 240 hours | College Prep Lab Science Year 1-2 240 hours |
| | Biomedical Science 480 hours | 8706 PLTW Principles of Bio Science 120 hours | 8707 PLTW Human Body Systems 120 hours | 8708 PLTW Medical Interventions 120 hours | 8719 PLTW Biomedical Innovation 120 hours | CIP and SOC Suggestions CIP: 26.0102 - Biomedical Sciences, General SOC: 19-1042 Medical Scientists, Except Epidemiologist SOC: 19-4021 Biological Technicians Or CIP: 15.0401 Biomedical Technology/Technician SOC: 17-3029.00 - Engineer Tech, Except Drafters, All Other Or CIP: 26.9999 - Biological and Biomedical Sciences, Other SOC: 19-1029 - Biological Scientists, All Other | | |

| Pathway: Science and Mathematics | | | | | | | | | |
|---|----------------------------|--|------------------------------------|-------------------------------------|--|---|---|---|--|
| State Program | | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
| SC0026008 Biotechnology Program 480 hours OCAS 9872 | Biotechnology 960 hours | 8701 Survey of Biotech 120 hours | 8702 Biotech I 120 hours | 8703 Biotech II 120 hours | 8704 Adv Biotech I 120 hours | 8717 Advanced Biotech II 120 hours | 5035 AP Biology 5055 AP Chemistry 120 hours | 5121 AP Environmental Science 120 hours | 8705 STEM Capstone 120 hours |
| SC0026001 Biotechnology Program - Advanced 960 OCAS 9872 & 9873 | Biotechnology 480 hours | 8701 Survey of Biotech 120 hours | 8702 Biotech I 120 hours | 8703 Biotech II 120 hours | 8705 STEM Capstone 120 hours | CIP and SOC Suggestions | | | |
| | | | | | | CIP: 41.0101 Biology/Biotechnology Technology/Technician SOC: 19-4021 Biological Technicians | | | |