## STEM Certifying Organizations – Assessments on reverse

American Board of Radiology (ABR)
American Congress on Surveying and Mapping (ACSM)
American Institute of Hydrology (AIH)
American Meteorological Society (AMS)
American Oil Chemists' Society (AOCS)
American Osteopathic Board of Nuclear Medicine
American Osteopathic Board of Pathology
American Petroleum Institute (API)
American Society for Microbiology (ASM)
American Society for Nondestructive Testing (ASNT)
American Society for Photogrammetry and Remote Sensing (ASPRS)
American Society for Quality / ASQ
American Society of Mechanical Engineers (ASME)
Society of Petroleum Engineers (SPE)
American Society of Plumbing Engineers (ASPE)
American Registry for Diagnostic Medical Sonography
Association of Energy Engineers (AEE)
Association of Ground Water Scientists and Engineers (AGWSE)
BioCommunications Association (BCA)
Board of Certification in Professional Ergonomics (BCPE)
Board of Certified Safety Management
Board of Certified Safety Professionals / BCSP
CAAHEP
Electronics Technician Association, International (ETA-I)
Entomological Society of America (ESA)
Fluid Power Society / FPS
Institute for Sustainable Power (ISP)
Institute of Professional Environmental Practice / IPEP
International Association of Knowledge Engineers (IAKE)
Association for the Advancement of Medical Instrumentation (AAMI)
International Electrical Testing Association (NETA)
American Association of Bioanalysts (AAB)
ISA / International Society for Measurement and Control
Materials Handling and Management Society (MHMS)
Microscopy Society of America (MSA)
MTM Association for Standards and Research (MTM)
NACE International
Association of Technology, Management and Applied Engineering
National Association of Radio and Telecommunications Engineers (NARTE)
National Certification Commission in Chemistry and Chemical Engineering (NCCCCE)
Board of Echocardiography
National Institute for Certification in Engineering Technologies / NICET
National Registry in Clinical Chemistry (NRCC)
Nuclear Medicine Technology Certification Board /NMTCB
Project Management Institute (PMI)
Research Administration Certification Council (RACC)
Society of Manufacturing Engineers / SME

## Kansas STEM Cluster/Pathways

## Employment / Careers

Aeronautical Engineer*
Aerospace Engineer*
Analytical Chemist*
Application Engineer*
Applied Mathematician*
Architectural Engineer*
Astrophysicist*
Atmospheric Scientist*
Biologist*
Biomedical Engineer*
Biotechnology Engineer*
Cad Operator*
Cartographer*
Chemical Engineer*
Chemist*
Civil Engineer*
Technologist*
Conservation Scientist*
Construction Engineer*
Consultant*
Cryptographer*
Dye Chemist*
Ecologist*
Electrical Engineer*
Electronics Technician*
Electronmicroscopist *
Energy Transmission Engineer*
Environmental Engineer*
Environmental Scientist*
Expert Systems Scientist*
Facilities Technician*
Geneticist*
Geologist*
Geophysicist*
Geoscientist*
Geothermal Engineer*
Hazardous Waste Engineer*
Hazardous Waste Technician*
Human Factors Engineer *
Hydrologist*
Industrial Engineer*
Industrial Engineering Technician*
Inorganic Chemist*
Lab Technician*
Manufacturing Engineer*
Manufacturing Processes Engineer*
Manufacturing Technician*
Materials Analyst*
Materials Engineer*
Materials Lab & Supply Technician*
Materials Scientist*
Mechanical Engineer
Metallurgic Engineer*
Metallurgist*
Meteorologist*
Microbial Physiologist*
Mining Engineer*
Mycologist*
Nanobiologist*
Naval Engineer*
Nuclear Chemists*
Nuclear Engineer And Procurement Engineer
Nuclear Engineer*
Nuclear Technician *
Nutritionist*
Ocean Engineer*
Oceanographer*
Operations Research Engineer*
Organic Chemist*
Packaging Engineer*
Packaging Technician
Petroleum Engineer*
Pharmaceutical Engineer*
Physicist*
Plastics Engineer*
Polymer Scientist*
Power Systems Engineer*
Product Design Engineer*
Project Engineer*
Project Manager*
Protein Scientist*
Prototype Engineer*
Quality Engineer*
Quality Technician*
Quality-Control Scientist*
Radio Chemist*
Radiology Engineer*
Research Chemist*
Research Technician*
Safety Engineer*
Scientific Visualization / Graphics Expert*
Sound Technician*
Spectroscopist*
Statistician*
Structural Engineer*
Survey Technician*
Systems Design Engineer*
Technologist*
Textile Engineer*
Toxicologist*

For the pathway you have selected, choose at least three courses, one from each level.

Key ( * = suggested )
Yellow=Introductory Green=Technical Cyan=Application

Courses are targeted at one credit but are not always strictly limited to that designation.
*Individual students may be awarded credit based upon demonstrated knowledge of the content of a course or subject, regardless of the amount of time spent by the student in the course or subject. This regulation shall be effective on and after July 1, 2005 (Authorized by and implementing Article 6, Section 2(a) of the Kansas Constitution; effective July 1, 2005)*

## Career Concentrations / Pathways

Designations of "EbD," "PLTW," and "CWF" are for the purposes of appropriately identifying courses for those programs, not for exclusion of usage by others – all courses are available to all schools and programs as desired by the school's instructional staff and identified within their pathways.

| Engineering & Applied Mathematics CIP-14.0101 | | BioMedical CIP-14.0501 | Cartography/Geospatial/Spatial Mathematics CIP-15.1102 | BioChemistry/Green/Hazmat CIP-14.1401 |
|---|---|---|---|---|
| Choose a minimum of 3 courses-min 1 per level | | Choose a minimum of 3 courses-min 1 per level | Choose a minimum of 3 courses-min 1 per level | Choose a minimum of 3 courses-min 1 per level |
| 03153/53153 Principles of Technology | | 03051/53051 Biology | 03001/53008 Earth Science \| 03007 Physical Geography | *03003 Environmental Science |
| 10002/60002 Computing Systems (8th-9th) | | 10002/60002 Computing Systems (8th-9th) | 03153/53153 Principles of Technology | 10002/60002 Computing Systems (8th-9th) |
| 10004/60004 Computer Applications (8th-9th) | | 10004/60004 Computer Applications (8th-9th) | 10002/60002 Computing Systems (8th-9th) | 10004/60004 Computer Applications (8th-9th) |
| 21001/71001 Pre-Engineering Technology[EbD] | | 21002/71002 Engineering Applications [GTT PLTW] | 10004/60004 Computer Applications (8th-9th) | 21002/71002 Engineering Applications [GTT PLTW] |
| 21002/71002 Eng App [GTT-basic (1-3) PLTW] | | *21003/71003 Eng Tech [GTT PLTW & EbD] | 21001/71001 Pre-Engineering Technology[EbD] | *21003/71003 Engineering Technology [GTT PLTW & EbD] |
| *21003/71003 Eng Tech [GTT-adv 4-6) PLTW&EbD] | 21108 Blueprint Reading (0.5) | *14251 Principles of Biomedical Sciences [PLTW] | 21002/71002 Engineering Applications [GTT PLTW] | 04170 Environmental Law |
| *21004 Principles of Engineering [PLTW] | 39108AdvProd Blueprnt Rdng (0.5) | *03053 Anatomy and Physiology [PLTW] or | *21003/71003 Engineering Technology [GTT PLTW & EbD] | *18308 Biotechnology in Agriculture \| 18055 Soil Science |
| 21005 Engineering—Comprehensive | | *14102 Human Body Systems [PLTW] | 03006 Meteorology | 03207 AP Environmental Science \| 03005 Aquatic Science |
| *21006 Engineering Design [PLTW & EbD] | 21009 Robotics [EbD] | *14105 Medical Interventions [PLTW] | 10210 Animation | 03208 IB Environmental Systems \| 14253 Pharmacology |
| 21054 Technology Innovation and Assessment | 21201 Foundations of Electronics | 14253 Pharmacology | 21009 Robotics] | *03203 Applied Bio Chemistry |
| 21053 Emerging Technologies | 21252 Materials Science & Eng | 22203 Food Science 18305 either course number | 21055 Aerospace Technology | 14102 Human Body Systems or 03053 Anatomy&Physiology[PLTW] |
| *21008 Digital Electronics [PLTW] | 21011 Civil Engineering | 22213 Nutrition & Health Science | *21111 GIS Technology | 18501 Wildlife Management |
| 21012 Civil Engineering and Architecture [PLTW] | | 03056 AP Biology | *21112 GIS Spatial Applications | 21014 Biotechnical Engineering |
| 21010 Computer Integrated Manufacturing [PLTW & EbD] | | 21009 Robotics | 21053 Emerging Technologies | 21053 Emerging Technologies |
| *21007 Engineering Design and Development [PLTW "Capstone" & EbD "Capstone"] | | | 21011 Civil Engineering | 18504 Natural Resources Management |
| 21013 Aerospace Engineering [PLTW] | | 21053 Emerging Technologies | 21012 Civil Engineering and Architecture [PLTW] or | 21205 Project Management & Resource Scheduling |
| 21014 Biotechnical Engineering [PLTW] | | 21014 Biotechnical Engineering [PLTW] | 21013 Aerospace Engineering | *21016 Research in Environmental Science and Engineering |
| 21015 Particular Topics in Engineering | 21205 Project Management & Res Scheduling | *14255 Biomedical Innovation [ PLTW "Capstone"] | 21205 Project Management & Resource Scheduling | 18506 Environmental Resources and Wildlife Science |

## Skills / Academic Foundation /Career Exploration (focus student interest –Career Pipeline, 21st Century Skills, Technical Writing instruction, etc)

(Middle Schools Can Provide the Introductory/Exploratory Course – We Encourage This Practice – [HSxxx/MSxxx] Second number denotes new Middle School Course Number)

♦Academic Foundations ♦Communications ♦Problem Solving and Critical Thinking ♦Information Technology Applications ♦ Systems ♦ Safety, Health and Environmental
♦Leadership and Teamwork ♦Ethics and Legal Responsibilities ♦Employability and Career Development ♦Technical Skills

***All Courses are 1.0 Credits unless otherwise specified***

| | |
|---|---|
| American Board of Radiology (ABR) – Added Qualifications | American Board of Radiology (ABR) |
| Certified Hydrographer | American Congress on Surveying and Mapping (ACSM) |
| Professional Hydrogeologist (PHG) (PH) (PH-GW) (PH-WQ), Surface Water | American Institute of Hydrology (AIH) |
| Certified Consulting Meteorologist (CCM) | American Meteorological Society (AMS) |
| Approved Chemist | American Oil Chemists' Society (AOCS) |
| Board Eligible, American Osteopathic Board of Nuclear Medicine | American Osteopathic Board of Nuclear Medicine |
| Board Eligible, American Osteopathic Board of Pathology | American Osteopathic Board of Pathology |
| Aboveground Storage Tank Inspector Certification; Piping Inspector Certification; Pressure Vessel Inspector Certification; Refractory Personnel Certification; Tank Entry Supervisor Certification; Supplemental Inspection Certification; UT Shear Wave (Detection, Sizing) Qualification | American Petroleum Institute (API) |
| Registered Diagnostic Medical Sonographer (RDMS), (RDCS), (RVT) & Principles and Instrumentation Exam (SPI) | American Registry for Diagnostic Medical Sonography |
| ARRT Certification | American Registry of Radiologic Technologists |
| Registered Microbiologist (RM); Specialist Microbiologist SM) | American Society for Microbiology (ASM) |
| Nondestructive Testing Level I, II, III RRSP | American Society for Nondestructive Testing (ASNT) |
| Certified Mapping Scientist -GIS/LIS; Certified Mapping Scientist-Remote Sensing; Certified Photogrammetrist | American Society for Photogrammetry and Remote Sensing (ASPRS) |
| American Society for Quality / ASQ<br>CRE/CSQE, (CRE) (CSQE) | American Society for Quality / ASQ |
| ASME Certification | American Society of Mechanical Engineers (ASME) |
| Petroleum Operations Engineer (POE) | Society of Petroleum Engineers (SPE) |
| Certified in Plumbing Design (CPD) | American Society of Plumbing Engineers (ASPE) |
| Association of Energy Engineers (AEE), (CEM), (CEP), (CPQ), (CLEP), (CSDP), (CEA), (BEP), (DGCP), (CGD), (EMIT), (CRM), (CBCP), (CMUP), Certified Green Building Engineer (GBE) | Association of Energy Engineers (AEE) |
| Certified Ground Water Professional (CGWP) | Association of Ground Water Scientists and Engineers (AGWSE) |
| Registered Biological Photographer (RBP) | BioCommunications Association (BCA) |
| Board of Certification in Professional Ergonomics (BCPE)<br>(AEP), (AHEP), (CHFP), (CPE), (CUXP), (AUXP) | Board of Certification in Professional Ergonomics (BCPE) |
| Board of Certified Safety Management<br>(CPSM), (CPSM), (CPSM), (CHEP), (CPSO), (CHSP), (CHCM) | Board of Certified Safety Management |
| Certified Occupational Health and Safety Technologist (OHST)<br>Certified Loss Control Specialist, Certified Safety Professional, Construction Health and Safety Technician (CHST) | Board of Certified Safety Professionals / BCSP |
| CAAHEP Certifications | CAAHEP |
| Electronics Technician Association, International (ETA-I) - Certifications | Electronics Technician Association, International (ETA-I) |
| Board Certified Entomologist (BCE)<br>Associate Board Certified Entomologist | Entomological Society of America (ESA) |
| Fluid Power Society / FPS Certifications | Fluid Power Society / FPS |
| Institute for Sustainable Power (ISP) | Institute for Sustainable Power (ISP) |
| Institute of Professional Environmental Practice / IPEP Certifications | Institute of Professional Environmental Practice / IPEP |
| Certified Knowledge Engineer (CKE) | International Association of Knowledge Engineers (IAKE) |
| Certified Biomedical Equipment Technician (CBET)<br>Certified Laboratory Equipment Specialist (CLES)<br>Certified Radiology Equipment Specialist (CRES) | Association for the Advancement of Medical Instrumentation (AAMI) |
| NETA Certified Test Technician, Levels 1-4 | International Electrical Testing Association (NETA) |
| American Association of Bioanalysts (AAB) Certifications<br>(Gsup), (POLT), (MLT) AAB, (MT) AAB, PBT (AAB), (EMA) AAB | American Association of Bioanalysts (AAB) |
| Certified Control Systems Technician, Level I, II, III (CCST)<br>Certified Automation Professional<br>Certified Industrial Maintenance Mechanics | ISA / International Society for Measurement and Control |
| Certified Associate in Materials Handling (CAMH)<br>Professional Certified in Materials Handling (PCMH) | Materials Handling and Management Society (MHMS) |

Leadership and Assistance for Student Learning
Kansas State Department of Education

| | |
|---|---|
| Certified Electron Microscopy Technologist | Microscopy Society of America (MSA) |
| Certification in Ergonomics<br>MTM Generic Systems<br>MTM Functional Systems | MTM Association for Standards and Research (MTM) |
| NACE Certifications | NACE International |
| Certified Manufacturing Specialist<br>Certified Technology Managers | Association of Technology, Management and Applied Engineering |
| Electromagnetic Compatibility Engineer Electromagnetic Compatibility Technicans<br>Electrostatic Discharge Control Engineer<br>Electrostatic Discharge Technician | National Association of Radio and Telecommunications Engineers (NARTE) |
| Certified Professional Chemical Engineer (CPChE)<br>Certfied Professional Chemist (CPC) | National Certification Commission in Chemistry and Chemical Engineering (NCCCCE) |
| Certified Echocardiograhic Technologist (CET) | Board of Echocardiography |
| Associate Engineering Technician (AET) Associate Engineering Technologist (ACT)<br>Certified Engineering Technologist (CT) Engineering Technician (ET)<br>Senior Engineering Technician (SET) Technician Trainee (TT) | National Institute for Certification in Engineering Technologies / NICET |
| Clinical Chemist (CCT)<br>Clinical Chemistry Technologist (CCT) Toxiological Chemist<br>Environmental Analytical Chemist/Technician<br>Clinical Hygiene Officer | National Registry in Clinical Chemistry (NRCC) |
| Certified Nuclear Medicine Technologist (CNMT) | Nuclear Medicine Technology Certification Board /NMTCB |
| Project Management Professional (PMP) | Project Management Institute (PMI) |
| Certified Research Administrator (CRA) | Research Administration Certification Council (RACC) |
| Certified Manufacturing Technologist<br>Certified Manufacturing Engineering Certification | Society of Manufacturing Engineers / SME |

| Level | Engineering | BioMed | Cartography | BioChem | Course Number | Course name | Current Licensure |
|---|---|---|---|---|---|---|---|
| I | X | X | X | X | 10002 | Computing Systems | Computer Studies or Communications Technology or Library Media Specialist License or Business or Business Education Comprehensive or [Industrial Arts Comprehensive teaching license at grade level with verifiable computer training]<br>Technical Education Certificate: Information Processing<br>Technical Certificate: Communications<br>Technical Certificate: Computer Hardware Technology<br>Technical Education Certificate: Programming<br>*Middle School Courses – Any Teacher License at Grade Level |
| I | X | X | X | X | 10004 | Computer Applications | Computer Studies or Communications Technology or Library Media Specialist License or Business or Business Education Comprehensive or [Industrial Arts Comprehensive teaching license at grade level with verifiable computer training]<br>Technical Education Certificate: Information Processing<br>Technical Certificate: Communications<br>Technical Certificate: Computer Hardware Technology<br>Technical Education Certificate: Programming<br>*Middle School Courses – Any Teacher License at Grade Level |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| I | | | X | X | 03001 | Earth Science | Earth and Space Science; Comprehensive Industrial Technology or General Industrial Technology or Industrial Arts or Technology Education or AG with appropriately related training |
| I | | | | X | 03003 | Environmental Science | Biology, Chemistry, or Earth and Space Science; Comprehensive Industrial Technology or General Industrial Technology or Industrial Arts or Technology Education or AG with appropriately related training |
| T | | | | X | 03005 | Marine Science | Biology, Chemistry, or Earth and Space Science; Comprehensive Industrial Technology or General Industrial Technology or Industrial Arts or Technology Education or AG with appropriately related training |
| T | | | X | X | 03006 | Meteorology | Biology, Chemistry, or Earth and Space Science; Comprehensive Industrial Technology or General Industrial Technology or Industrial Arts or Technology Education or General Mathematics or Mathematics or Ag with appropriately related training |
| I | | | X | | 03007 | Physical Geography | Earth and Space Science; Comprehensive Industrial Technology or General Industrial Technology or Industrial Arts or Technology Education or General Mathematics or Mathematics or Ag or Social Studies-Geography with appropriately related training |
| I | | X | | | 03051 | Biology | Biology |
| T | | X | | | 03056 | AP Biology | Biology, see individual course requirements |
| I | X | | X | | 03153 | Principles of Technology | Comprehensive Industrial Technology or General Industrial Technology or Industrial Arts or Technology Education or General Mathematics or Mathematics or Ag or any grade-level appropriate science with appropriately related training |
| T | | | | X | 03203 | Applied Bio Chemistry | Biology or Chemistry; Comprehensive Industrial Technology or General Industrial Technology or Industrial Arts or Technology Education or AGor Physics with appropriately related training |
| T | | | | X | 03207 | AP Environmental Science | Biology, Chemistry, or Earth and Space Science; Comprehensive Industrial Technology or General Industrial Technology or Industrial Arts or Technology Education or AG with appropriately related training |
| T | | | | X | 03208 | IB Environmental Systems | Biology, Chemistry, or Earth and Space Science; Comprehensive Industrial Technology or General Industrial Technology or Industrial Arts or Technology Education or AG with appropriately related training |
| T | | | | X | 04170 | Environmental Law | Business or History & Government; any grade-level appropriate science with appropriately related training |
| T | | | X | | 10210 | Animation | Comprehensive Industrial Technology or General Industrial Technology or Industrial Arts or Technology Education or Communications or Business or Art with appropriately related training |
| T | | X | | X | 03053 | Anatomy & Physiology | Biology, Health Sciences Certificate, or see individual course requirements, Comprehensive Industrial Technology or General Industrial Technology or Industrial Arts or Technology Education or AG with appropriately related training |
| T | | X | | X | 14102 | Human Body Systems [PLTW] | Biology, Health Sciences Certificate, or see individual course requirements, Comprehensive Industrial Technology or General Industrial Technology or Industrial Arts or Technology Education or AG with appropriately related training |
| T | | X | | | 14105 | Medical Interventions [PLTW] | Biology or Chemistry; Health Sciences Certificate, or see individual course requirements |
| T | | X | | | 14251 | Principles of Biomedical Sciences [PLTW] | Biology or Chemistry; Health Sciences Certificate, or see individual course requirements |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| T | | X | | X | 14253 | Pharmacology | Biology or Chemistry; Health Sciences Certificate, or see individual course requirements, Comprehensive Industrial Technology or General Industrial Technology or Industrial Arts or Technology Education or AG with appropriately related training |
| A | | X | | | 14255 | Biomedical Innovation [ PLTW "Capstone"] | Biology or Chemistry; Comprehensive Industrial Technology or General Industrial Technology or Industrial Arts or Technology Education or with appropriately related training |
| T | | | | X | 18055 | Soil Science | Earth and Space Science, Biology or Chemistry; Comprehensive Industrial Technology or General Industrial Technology or Industrial Arts or Technology Education or AG with appropriately related training |
| T | | | | | 18305 | Food Science 22203 either course number | FACs, Health Sciences Certificate, AG, Biology, Chemistry or any grade-level appropriate science with appropriately related training |
| T | | | | X | 18308 | Biotechnology in Agriculture | Comprehensive Industrial Technology or General Industrial Technology or Industrial Arts or Technology Education or AG or Chemistry or Biology with appropriately related training |
| T | | | | X | 18501 | Wildlife Management | Comprehensive Industrial Technology or General Industrial Technology or Industrial Arts or Technology Education or AG or Earth and Space or Biology with appropriately related training |
| A | | | | X | 18504 | Natural Resources Management | Comprehensive Industrial Technology or General Industrial Technology or Industrial Arts or Technology Education or AG or Earth and Space or Biology with appropriately related training |
| A | | | | X | 18505 | Environmental Resources and Wildlife Science | Comprehensive Industrial Technology or General Industrial Technology or Industrial Arts or Technology Education or AG or Earth and Space or Biology with appropriately related training |
| I | X | | X | | 21001/71001 | Pre-Engineering Technology[EbD] | Comprehensive Industrial Technology or General Industrial Technology or Industrial Arts or Technology Education or General Mathematics or Mathematics Ag or Physics or any grade-level appropriate science with appropriately related training |
| I | X | X | X | | 21002/71002 | Engineering Applica [GTT-basic (1-3) PLTW] | Comprehensive Industrial Technology or General Industrial Technology or Industrial Arts or Technology Education or General Mathematics or Mathematics or Ag Physics or any grade-level appropriate science with appropriately related training |
| I | X | X | X | | 21003/71003 | Eng Tech [GTT-advanced 4-6) PLTW & EbD] | Comprehensive Industrial Technology or General Industrial Technology or Industrial Arts or Technology Education or General Mathematics or Mathematics or Ag or Physics or any grade-level appropriate science with appropriately related training |
| T | X | | | | 21004/71004 | Principles of Engineering [PLTW] | Comprehensive Industrial Technology or General Industrial Technology or Industrial Arts or Technology Education or General Mathematics or Mathematics or Physics or any grade-level appropriate science with appropriately related training |
| T | X | | | | 21005/71005 | Engineering—Comprehensive | Comprehensive Industrial Technology or General Industrial Technology or Industrial Arts or Technology Education or General Mathematics or Mathematics or Physics or any grade-level appropriate science with appropriately related training |
| T | X | | | | 21006/71006 | Engineering Design [PLTW & EbD] | Comprehensive Industrial Technology or General Industrial Technology or Industrial Arts or Technology Education or General Mathematics or Mathematics or Physics or any grade-level appropriate science with appropriately related training |
| A | X | | | | 21007/71007 | Engineering Design and Development [PLTW "Capstone" & EbD "Capstone"] | Comprehensive Industrial Technology or General Industrial Technology or Industrial Arts or Technology Education or General Mathematics or Mathematics or Physics or grade-level appropriate science with appropriately related training |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| A | X | | | | 21008 | Digital Electronics [PLTW] | Comprehensive Industrial Technology or General Industrial Technology or Industrial Arts or Technology Education or General Mathematics or Mathematics or Physics or grade-level appropriate science with appropriately related training |
| T | X | X | X | | 21009/71009 | Robotics [EbD] | Comprehensive Industrial Technology or General Industrial Technology or Industrial Arts or Technology Education or General Mathematics or Mathematics or Physics or grade-level appropriate science with appropriately related training |
| A | X | | | | 21010 | Computer Integrated Manufacturing [PLTW & EbD] | Comprehensive Industrial Technology or General Industrial Technology or Industrial Arts or Technology Education or General Mathematics or Mathematics or Physics or grade-level appropriate science with appropriately related training |
| A | X | | X | | 21011 | Civil Engineering | Comprehensive Industrial Technology or General Industrial Technology or Industrial Arts or Technology Education or General Mathematics or Mathematics or Physics or Ag or grade-level appropriate science with appropriately related training |
| A | X | | X | | 21012 | Civil Engineering and Architecture [PLTW] or | Comprehensive Industrial Technology or General Industrial Technology or Industrial Arts or Technology Education or General Mathematics or Mathematics or Physics or Ag or grade-level appropriate science with appropriately related training |
| A | X | | X | | 21013 | Aerospace Engineering [PLTW] | Comprehensive Industrial Technology or General Industrial Technology or Industrial Arts or Technology Education or General Mathematics or Mathematics or Physics or Ag or grade-level appropriate science with appropriately related training |
| A | X | X | | X | 21014 | Biotechnical Engineering [PLTW] | Comprehensive Industrial Technology or General Industrial Technology or Industrial Arts or Technology Education or General Mathematics or Mathematics or Physics or Health Sciences Certificate or grade-level appropriate science with appropriately related training |
| A | X | | | | 21015 | Particular Topics in Engineering | Comprehensive Industrial Technology or General Industrial Technology or Industrial Arts or Technology Education or General Mathematics or Mathematics or Physics or grade-level appropriate science with appropriately related training |
| A | | | | X | 21016 | Research in Environmental Science and Engineering | Comprehensive Industrial Technology or General Industrial Technology or Industrial Arts or Technology Education or AG or General Mathematics or Mathematics or Physics or grade-level appropriate science with appropriately related training |
| A | | X | X | X | 21053 | Emerging Technologies | Comprehensive Industrial Technology or General Industrial Technology or Industrial Arts or Technology Education or General Mathematics or Mathematics or Physics or grade-level appropriate science with appropriately related training |
| T | X | | | | 21054 | Technology Innovation and Assessment | Comprehensive Industrial Technology or General Industrial Technology or Industrial Arts or Technology Education or General Mathematics or Mathematics or Physics or grade-level appropriate science with appropriately related training |
| T | | | X | | 21055 | Aerospace Technology | Comprehensive Industrial Technology or General Industrial Technology or Industrial Arts or Technology Education or General Mathematics or Mathematics or Physics or Ag or grade-level appropriate science with appropriately related training |
| T | X | | | | 21108 | Blueprint Reading | Comprehensive Industrial Technology or General Industrial Technology or Industrial Arts or Technology Education or General Mathematics or Mathematics or Physics or grade-level appropriate science with appropriately related training |
| T | | | X | | 21111 | GIS Technology | Comprehensive Industrial Technology or General Industrial Technology or Industrial Arts or Technology Education or General Mathematics or Mathematics or Physics or Ag or grade-level appropriate science or Geography Endorsement (or Social Studies Comprehensive) with appropriately related training |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| A | | | X | | 21112 | GIS Spatial Applications | Comprehensive Industrial Technology or General Industrial Technology or Industrial Arts or Technology Education or General Mathematics or Mathematics or Physics or Ag or Science or Geography Endorsement (or Social Studies Comprehensive) with appropriately related training |
| T | X | | | | 21201 | Foundations of Electronics | Comprehensive Industrial Technology or General Industrial Technology or Industrial Arts or Technology Education or General Mathematics or Mathematics or Physics or grade-level appropriate science with appropriately related training |
| A | X | | X | X | 21205 | Project Management & Resource Scheduling | Comprehensive Industrial Technology or General Industrial Technology or Industrial Arts or Technology Education or AG or General Mathematics or Mathematics or Physics or grade-level appropriate science with appropriately related training |
| A | X | | | | 21252 | Materials Science & Eng | Comprehensive Industrial Technology or General Industrial Technology or Industrial Arts or Technology Education or General Mathematics or Mathematics or Physics or grade-level appropriate science with appropriately related training |
| T | | X | | | 22203 | Food Science 18305 either course number | FACs, AG, Biology, Chemistry or any grade-level appropriate science with appropriately related training |
| T | | X | | | 22213 | Nutrition & Health Science | FACs, AG, Biology, Chemistry or any grade-level appropriate science with appropriately related training |

Kansas
state department of
Education
Learning Matters