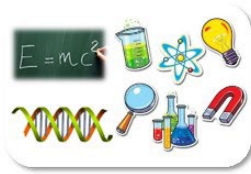**OKLAHOMA CareerTech** | **STEM** Science, Technology, Engineering & Mathematics

Guide to
CareerTech
Science, Technology, Engineering and Mathematics Programs
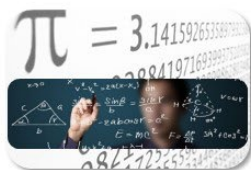
2023 - 2024

S cience

T echnology

E ngineering

M athematics

CAREERTECH DELIVERS

391 PK-12 School Districts

29 Technology Center Districts

15 Skills Centers Sites

32 Adult Education & Family Literacy Providers

FY22 ENROLLMENTS
Secondary
PK-12 Schools.................................. 138,295
Technology Centers 20,168
Total Secondary Enrollment................. 158,463
Postsecondary
Full-Time Programs 9,586
Industry-Specific Training............ 209,857
Adult and Career Development.... 49,672
Training for Industry.......................... 9,392
Skills Centers - Full-Time 551
Skills Centers - Short-Term.................. 295
Skills Centers - Partner Programs 199
Adult Education & Family Literacy... 8,925
Total Postsecondary Enrollment........ 288,477
Total Enrollment—All Categories 446,940

NOTE: Students enrolled are duplicated in some categories.

TEACHERS IN FULL-TIME OFFERINGS
Technology Centers 1,372
PK-12 Schools...1,457
Skills Centers...33
Total 2,862

STATEWIDE SERVICES
PK-12 School Districts
  with CareerTech Offerings 391
PK-12 School Sites
  with CareerTech Offerings.......................... 570
Technology Center Districts.............................29
Technology Center Campuses......................... 60
Counties Served by Technology Centers......72
Skills Centers Sites...15
Adult Education & Family Literacy Providers..32
Adult Education & Family Literacy Sites......115

INDUSTRY CERTIFICATES
• **18,229 industry-endorsed certificates earned (FY21)**

POWERING OKLAHOMA'S ECONOMY

OKLAHOMA DEPARTMENT OF CAREER AND TECHNOLOGY EDUCATION
1500 West Seventh Avenue • Stillwater, OK 74074-4398
405.377.2000 • www.okcareertech.org

FY21 STUDENT PLACEMENT RATE
Positive placement (employed, military and continuing education) for completers in FY21 was 91 percent.
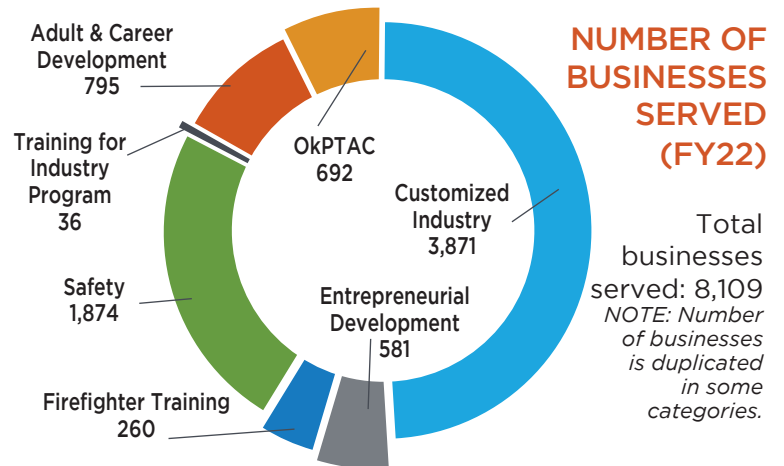

Continuing Education 45.25%
Employed 43.96%
Not Working 2.83%
Military 1.75%
Seeking 4.05%
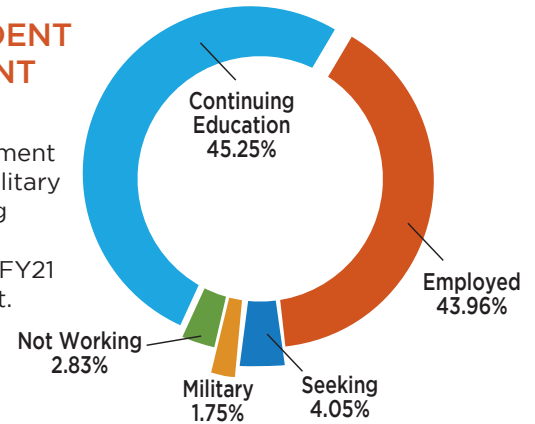
FY22 SECONDARY ENROLLMENTS
(unduplicated within grade level)

Grade	CareerTech	Statewide	Percent Served
5th	1,635	49,743	3.29%
6th	10,591	51,090	20.73%
7th	13,453	52,745	25.51%
8th	18,616	53,140	35.03%
9th	21,093	55,833	37.78%
10th	19,479	50,970	38.22%
11th	21,054	47,284	44.53%
12th	21,954	45,552	48.20%
5th-12th	127,875	406,357	31.47%
9th-12th	83,580	199,639	41.87%

Totals

NOTE: Total secondary CareerTech enrollment is 158,463 due to students who enroll in more than one program.

Adult & Career Development 795
Training for Industry Program 36
Safety 1,874
Firefighter Training 260
OkPTAC 692
Customized Industry 3,871
Entrepreneurial Development 581

NUMBER OF BUSINESSES SERVED (FY22)

Total businesses served: 8,109
NOTE: Number of businesses is duplicated in some categories.

CAREERTECH STUDENT ORGANIZATIONS
In FY22 more than 95,000 students learned important leadership skills as members of co-curricular CareerTech student organizations:

FCCLA Oklahoma 14,752
hosa OKLAHOMA 6,434
SkillsUSA OKLAHOMA 14,214
OKLAHOMA TSA 24,892
OKLAHOMA DECA 1,520
bpa BUSINESS PROFESSIONALS of AMERICA 5,686
FFA 27,892

Administrative Guide Table of Contents

Student Benefits
- STEM courses lead to college or national certification
- Oklahoma's Promise credit for science, math and computer technology
- Increased opportunity for employment and greater earning potential in chosen occupation
- Job skills to help defray cost of college
- Pathways to guide students into college or work
- Opportunity for college credits
- Internship opportunities
- Training to become life-long learners
- Local, state, and national leadership development through Technology Student Association (TSA) https://www.oktsa.org/
- TSA scholarship awarded to student members annually

Teacher Benefits
- $2,200 salary supplement for full-time funded programs or $1,100 for part-time
- The code for the salary supplement is 411
- Conferences and workshops for technical updates/program improvements
- Technical training for new and upcoming occupations
- Assistance and resources available from state staff
- New teacher training and support
- Free access to Moodle-powered classroom/learning management system https://ctyou.org/
- Scholarships available for teacher certification https://oklahoma.gov/careertech/educators/stem.html
  - ACTE (Association of Career and Technical Education) professional organization offering support for areas such as: life insurance options; legal representation and advice; leadership development; resources; political representation on key educational issues

School Benefits
- ICAP Work Based Learning Resources
  - https://oklahoma.gov/careertech/educators/work-based-learning/express-wbl-partnership.html
- Industry Certifications
- $9101 (STEM) program assistance funds for full-time funded programs (can vary due to budget shortfall)
- The finance project code for program assistance is 412
- Curriculum Guidance
- Career Guidance https://okcareerguide.kuder.com/landing-page
- Oklahoma's Promise credits available for science, math and computer technology
- A capstone course can earn one point on school report card
- Program and teacher support from state staff
- Program alignment for smooth transitions for students throughout educational experience
- Funding and grants (Perkins, Lottery, Innovative)
  - https://oklahoma.gov/careertech/educators/stem/funding-grants-and-scholarships.html

Community Benefits
- Input into education and training of future employees
- Workforce development
  - Express Partnership: https://oklahoma.gov/careertech/educators/work-based-learning/express-wbl-partnership.html
- Partnerships for live-work projects related to training programs
- Youth involved in the community through classroom and TSA activities
- Promotes responsible citizenship through TSA

Program Changes
- Submit a Form 2 for any *Career*Tech program changes (e.g. add, change of location, or drop a program).
  - https://oklahoma.gov/careertech/educators/stem/funding-grants-and-scholarships/new-programs.html
- STEM Teacher Changes notify Karsyn Bradshaw 405.743.6817 or Karsyn.bradshaw@careertech.ok.gov

Incentive Fund (412 Project Code and Program Code 315)
Incentive money is what the Science, Technology, Engineering and Math (STEM) Division of the Oklahoma Department of Career and Technology Education provides for your program to spend on technology and supplies. Currently, the amount is $9101 per year for full-time funded programs. Incentive money is divided into quarterly payments that are sent to your school in **September, December, March, and May**.

This money is for you and your program only. It cannot be shared with other teachers or programs.

A 412 Expense Report must be submitted to our office each year that identifies how the incentive money has been spent for your program.

An additional $2,200 is provided to the full-time funded program instructors for salary supplement (*CT* Extra Duties) 411 is sent to schools in **December and May**.

Items that <u>can</u> be purchased with Incentive Money
Funds can be used for equipment/technology, curriculum, resources, and professional development. All must be used/placed in the program being funded.
Website: https://oklahoma.gov/careertech/educators/stem/funding-grants-and-scholarships/incentive-funds.html
Following are some examples of items that can be purchased:
- Computers for students or instructor
- Printers, Projectors, Smartboards, GPS devices, Graphics tablets
- iPads and tablets
- Other computer technology devices
- Software
- Curriculum and Certifications
- Professional Development for the instructor (includes travel expenses to the PD)
- Supplies for your program (ink, paper, etc.)
- Training sites used in the classroom (e.g., Whitebox Learning, LinkedIn Learning)
- Registration and travel for you to TSA conferences (does NOT include students)
- TSA Affiliation Fee (Blue CAP only), TSA official dress (must stay with program)

School Responsibilities
- Offer programs/courses that meet state guidelines
- STEM Courses transcripted and reported to SDE with the approved 8000 level OCAS Codes (see pages 6-8)
- Follow prerequisite requirements for class offerings
- Facility must meet program needs
- Equipment must meet industry standards
- Class enrollment should not exceed 24
- Each student must have their own individual workstation with necessary software installed
- Courses are available for students from grades $6^{th} – 12^{th}$
- Program assistance monies designated for computers/equipment (including supplies), software, and curriculum. Professional development approved for instructor only.
  - Items purchased <u>must be</u> located in instructor's classroom/lab, not placed in the school's common area or another classroom.
  - Instructor should control/monitor expenditures.
- Submit a Form 2 for any *Career*Tech program changes (add, change or drop a program).
- STEM Teacher Changes notify Karsyn Bradshaw 405.743.6817 or Karsyn.bradshaw@careertech.ok.gov

Teacher Certification Questions

Teacher certification is based on the OCAS code of the course use the link below to determine certification once the STEM courses have been determined.

- Course OCAS Codes: https://oklahoma.gov/careertech/educators/stem/course-information/course-codes.html
- Certification by OCAS Code: https://oklahoma.gov/careertech/educators/certifications/forms-and-resources.html
- Contact Laurie Richison Laurie.richison@careertech.ok.gov or 405-743-5482
- https://oklahoma.gov/careertech/educators/stem/about/teacher-certification.html

Teacher Responsibilities

- Appropriate certification for courses taught:
  - https://oklahoma.gov/careertech/educators/certifications/forms-and-resources.html
  - Contact Laurie Richison Laurie.richison@careertech.ok.gov or 405-743-5482
- Offer state-approved STEM courses and provide students with approved syllabi
  - Part-time programs require minimum of 3 state approved STEM courses
- Conduct at least one Advisory Committee meeting per year
- Complete Follow up Report on students in high school programs
- Advise and maintain an active TSA chapter
- Attend Fall and State Leadership Conferences yearly. Students should compete at the state level.
- Submit *Career*Tech reports by due date
- Attend Oklahoma Summit Conference yearly
- Seek professional development that aligns with courses taught
- Work with local technology center to align curriculum and provide occupational outcomes for students
- Prepare for 5-year accreditation (TC) or evaluation of program (grades 5-12) as scheduled
- Submit TSA Program of Work annually
  - Chapter Success Guide https://www.oktsa.org/new-advisors

Funded & Unfunded Program Opportunities

STEM Grants, Awards and Scholarship

PLTW, National Board, OkACTE, and more
https://oklahoma.gov/careertech/educators/stem/funding-grants-and-scholarships.html

Funding and Grants

Financial aid funding, and grant opportunities related to school educators and administrator. Including Lottery Grants, Carl Perkins, Supplemental Grants, Grant Opportunities Announcements, Form 2 Program Requests
Innovative Grants: https://oklahoma.gov/careertech/educators/legislation-assistance/perkins/innovation-grants.html
Lottery Grants: https://oklahoma.gov/careertech/educators/funding-and-grants.html
Perkins: https://oklahoma.gov/careertech/educators/legislation-assistance/perkins/grant-application-information.html
New Programs Form 2: https://oklahoma.gov/careertech/educators/stem/funding-grants-and-scholarships/new-programs.html

*Career*Tech Scholarships and Financial Aid

Paying for an education might seem like a challenging task, but it doesn't have to be. You may apply for several types of aid including scholarships, grants, long-term loans, and work-study assistance.

All *Career*Tech Scholarships
https://oklahoma.gov/careertech/students/scholarships.html

Lottery Fund College Scholarship for *Career*Tech Educators
These scholarship dollars are provided by the Oklahoma Education Lottery Trust Fund. The purpose of the funds is to help students obtain their teaching credentials.
Additional Information: https://oklahoma.gov/careertech/students/scholarships/lottery-funds-scholarships.html

OKCAREERGUIDE leads all Oklahomans through a proven career development process

Take an Assessment → Explore Occupations & Majors → Plan for Education → Plan for Work → Find a Job

HB 2155 – The ICAP Bill

Career & College Interest Surveys → Post-Sec. & Workforce Goals → Intentional Sequence of Courses → Academic Progress → Service-learning and/or work environment activities

Oklahoma Career Guide - Free

Oklahoma Career Guide an easy online tool available for all Oklahoman's to explore and guide their future. You can take assessments, identify occupations, establish education plans and, ultimately, connect to employers. Whether you are a student searching for career and college options or an adult looking for a new career path, OK Career Guide is the powerful tool to provide all the career and educational resources you will need to chart your course for the future.

Capstone

Oklahoma Career and Technology Education defines capstone as the final course within a CTE program of study which has a minimum course equivalency of 360 hours of instruction, including the capstone course. The project-based capstone prepares students for an industry credential and provides relevant technical skill training and mentorship or work experience. (8716 Engineering Design & Development, 8719 Biomedical Innovation, 8705 STEM Capstone, 8883 Aerospace Capstone)

Work-Based Learning Suggested Timeline

WORK-BASED LEARNING / COMPLETION CRITERIA			Grade 6	Grade 7	Grade 8	Grade 9	Grade 10	Grade 11	Grade 12	Grade 13
WBL Preparation	WBL Exploration	WBL Awareness								
			Tours/Field Trips	✓	✓	✓	✓	✓			
			Guest Speakers	✓	✓	✓	✓				
			Career Exploration Days/Fairs			✓	✓	✓			
			Interviews			✓	✓	✓			
		Mentoring		✓	✓	✓	✓	✓		
		Service Learning	✓	✓	✓	✓	✓	✓	✓	
		Community Service/Volunteer Work	✓	✓	✓	✓	✓	✓	✓	✓
		CareerTech Program of Study [PBL, Co-Op, etc.]				✓	✓	✓	✓	✓
		Job Shadow		✓	✓	✓	✓	✓	✓	✓
		Internship						✓	✓	✓
		Clinical						✓	✓	✓
		Pre-Apprenticeship/ Youth Apprenticeship					✓	✓	✓	✓
		Apprenticeship							✓	✓
		Employee Development							✓	✓

OCAS	Course	CESI	Oklahoma's Promise
	Science, Technology, Engineering, Mathematics **Grades 9 – 12**		
8149	Desktop Publishing and Graphic Design	BT00063	Computer
8150	Multimedia & Image Management Techniques	BT00128	Computer
8153	Fundamentals of Web Design	BT00003	Computer
8160	Advanced Programming	BT00016	Computer
8169	Fundamentals of Technology	BT00182	Computer
8191	Digital Media Production	BT00129	Computer
8255	Internet of Things (IoT) Fundamentals	BT00290	Computer
8256	Cybersecurity Basics	BT00291	Computer
8701	Survey of Biotechnology	ST00025	
8702	Biotechnology I	ST00017	
8703	Biotechnology II	ST00018	Science
8704	Advanced Biotechnology I	ST00026	
8705	STEM Capstone (Capstone Credit)	ST00027	
8706	PLTW Principles of Biomedical Science	ST00003	Science
8707	PLTW Human Body Systems	ST00001	Science
8708	PLTW Medical Interventions	ST00004	Science
8709	Intro to Engineering Design	ST00023	Computer
8710	Principles of Engineering	ST00024	Computer
8711	PLTW Digital Electronics	ST00021	Math
8712	PLTW Computer Integrated Manufacturing	ST00041	Computer
8713	PLTW Civil Engineering and Architecture	ST00019	
8715	PLTW Aerospace Engineering	ST00013	Science
8716	PLTW Engineering Design and Development (Capstone Credit)	ST00022	
8717	Advanced Biotechnology II	ST00040	Science
8718	Biomedical Health Careers	ST00060	
8719	PLTW Biomedical Innovation (Capstone Credit)	ST00005	Science
8720	Crime Scene Investigation	ST00278	Science
8825	Advanced Technological Applications	ST00191	
8826	Advanced Design Applications	ST00125	
8827	Engineering Design	ST00192	
8828	Technology Foundations	ST00134	
8833	Robotics Engineering	ST00142	Computer
8847	Technology and Society	ST00187	
8848	Technological Design	ST00136	
8849	Science and Technical Visualization I	ST00188	
8850	Science and Technical Visualization II	ST00189	
8851	AP Computer Science Principles	ST00200	Computer Science
8852	Computer Science Essentials	ST00248	Computer Science
8853	AP Computer Science A (CSA)	ST00208	Computer Science
8854	PLTW Environmental Sustainability	ST00213	Science
8855	Nature of Science & Technology (SREB)	ST00243	
8856	Core Applications of Science & Technology (SREB)	ST00244	
8857	Impacts of Science & Technology (SREB)	ST00245	
8858	Creativity & Innovations (SREB)	ST00247	
8859	Aerospace I	ST00246	
8860	Computer Science Principles	ST00249	Computer Science
8861	PLTW Cybersecurity	ST00250	Computer
8862	Advanced Technology for Design Production (SREB)	ST00251	
8863	Systems of Advanced Technology (SREB)	ST00252	
8864	Mechatronic Systems for Advanced Production (SREB)	ST00253	
8865	Design for the Production of Advanced Products (SREB)	ST00254	
8866	Advanced Robotics Engineering	ST00255	Computer
8867	Computer Science Discoveries	ST00256	Computer Science
8868	Aeroponics/Hydroponics/Aquaponics	ST00257	
8869	STEM Core	ST00258	
8870	Space Engineering Concepts	ST00259	Computer
8871	Python	ST00260	Computer Science
8872	Renewable Energy	ST00261	

	Science, Technology, Engineering and Math Core Courses Grade 9 – 12		
OCAS	Course	CESI	Oklahoma's Promise
8873	Google Tools	ST00262	Computer
8874	Aviation I	ST00263	
8875	Aviation II	ST00264	Computer
8876	Aviation III – Pilot	ST00265	Computer
8876	Aviation III – UAS	ST00267	Computer
8877	Aviation IV	ST00266	
8878	Engineering Essentials	ST00268	Computer
8879	Mechanical Design Engineering	ST00272	Computer
8880	Architecture Design	ST00273	Computer
8881	Virtual Reality (VR) Coding	ST00274	Computer
8882	Advanced Mechanical Design Engineering	ST00275	Computer
8883	Aerospace Capstone	ST00284	Capstone
8884	Regulations and Ground Operations	ST00279	
8885	Aircraft Material and Corrosions Control	ST00280	
8886	Applied Science of Aircraft Maintenance	ST00282	Computer
8887	Aviation Electricity	ST00281	Computer
8888	Drone Applications	ST00297	Computer
8903	Architecture Computer Aided Drafting and Design	TI00880	Computer
8904	Engineering Computer Aided Drafting and Design	TI00465	Computer
8905	Fundamentals of Computer Aided Drafting and Design	TI00365	Computer
8953	Introduction to Manufacturing	TI02044	
4412	Algebra II	ST00006	Math
4413	Algebra III	ST00269	Math
4520	Geometry	ST00009	Math
4614	AP Pre-Calculus	ST00300	Elective
4611	Pre-Calculus (120 hours)	ST00010	Math
4611	Pre-Calculus (60 hours)	ST00224	Math
4612	Calculus	ST00059	Math
4615	AP Calculus AB	ST00061	Math
4616	AP Calculus BC	ST00062	Math
4740	Statistics and Probability	ST00270	Math
4750	Trigonometry	ST00223	Math
4760	AP Statistics	ST00029	Math
4830	Advanced Studies in Math I	ST00290	
4831	Advanced Studies in Math II	ST00291	
5035	AP Biology	ST00028	Science
5051	Chemistry I	ST00016	Science
5055	AP Chemistry	ST00007	Science
5121	AP Environmental Science	ST00002	Science
5211	Physics I	ST00011	Science
5212	Physics II	ST00271	Science
5213	AP Physics 1: Algebra-Based	ST00206	Science
5214	AP Physics 2: Algebra-Based	ST00207	Science
5216	AP Physics C: Mechanics	ST00064	Science
5217	AP Physics C: Electricity & Magnetism	ST00065	Science
5220	Physiology (60 hours)	HL00598	Science
5220	Physiology (120 hours)	ST00298	Science
5333	Anatomy (60 hours)	HL00597	Science
5333	Anatomy (120 hours)	ST00299	Science
5336	Microbiology	ST00015	Science

CareerTech Certifications by Course
https://oklahoma.gov/careertech/educators/certifications.html

Oklahoma's Promise Approved Courses:
https://secure.okcollegestart.org/College_Planning/Prepare_for_College/course_guidelines.aspx
WBL Implementation Suggested Timeline
https://tinyurl.com/2h3dxuy5

CESI Pathway: SC000 Science, Technology, Engineering and Mathematics Exploratory

OCAS	Course Titles	CESI Course Codes
Science, Technology, Engineering and Math Courses Grade 6 – 8		Pathway: SC000 STEM Exploratory
8830	Engineering Exploration	ST00289 or Choose One Below
8830	Automation and Robotics (Gateway)	ST00088
8830	Design and Modeling (Gateway)	ST00085
8830	Gateway Exploration	ST00276
8830	Magic of Electrons (Gateway)	ST00086
8830	STEM Career Exploration	ST00288
8830	Tech Engineering Exploration I	ST00230 (Year), ST00229 (Semester), ST00228 (9 Week)
8830	Tech Engineering Exploration II	ST00236 (Year), ST00235 (Semester), ST00234 (9 Week)
8830	Tech Engineering Exploration III	ST00242 (Year), ST00241 (Semester), ST00240 (9 Week)
8835	Health Science Exploration	ST00286 Choose one below
8835	Medical Detectives Ex. (Gateway)	ST00090
8835	Tech Engineering Exploration I	ST00230 (Year), ST00229 (Semester), ST00228 (9 Week)
8835	Tech Engineering Exploration II	ST00236 (Year), ST00235 (Semester), ST00234 (9 Week)
8835	Tech Engineering Exploration III	ST00242 (Year), ST00241 (Semester), ST00240 (9 Week)
8838	Information Technology Exploration	ST00287 or Choose One Below
8838	App Creator Ex. (Gateway)	ST00091
8838	CS for Inn. & Makers Ex (Gateway)	ST00095
8838	Computer Science Exploration	ST00096
8838	Science of Technology Ex. (Gateway)	ST00087
8867	Computer Science Discoveries (Middle/High School)	ST00256
8874	Aviation I	ST00263
8971	Architecture & Construction Exploration	ST00292 or choose one below:
8971	Green Architecture Ex. (Gateway)	ST00139
8971	Tech Engineering Exploration I	ST00230 (Year), ST00229 (Semester), ST00228 (9 Week)
8971	Tech Engineering Exploration II	ST00236 (Year), ST00235 (Semester), ST00234 (9 Week)
8971	Tech Engineering Exploration III	ST00242 (Year), ST00241 (Semester), ST00240 (9 Week)
8972	Arts, A/V Technology & Communication Exploration	ST00293 or choose one below:
8972	Tech Engineering Exploration I	ST00230 (Year), ST00229 (Semester), ST00228 (9 Week)
8972	Tech Engineering Exploration II	ST00236 (Year), ST00235 (Semester), ST00234 (9 Week)
8972	Tech Engineering Exploration III	ST00242 (Year), ST00241 (Semester), ST00240 (9 Week)
8874	Google Tools (Middle/High School)	ST00262
8976	Natural Resources Exploration	ST00294 or choose one below:
8976	Energy and the Environment Exploration (Gateway)	ST00138
8976	Renewable Energy Exploration	ST00277
8976	Tech Engineering Exploration I	ST00230 (Year), ST00229 (Semester), ST00228 (9 Week)
8976	Tech Engineering Exploration II	ST00236 (Year), ST00235 (Semester), ST00234 (9 Week)
8976	Tech Engineering Exploration III	ST00242 (Year), ST00241 (Semester), ST00240 (9 Week)
8977	Manufacturing Exploration	ST00295 or choose one below:
8977	Tech Engineering Exploration I	ST00230 (Year), ST00229 (Semester), ST00228 (9 Week)
8977	Tech Engineering Exploration II	ST00236 (Year), ST00235 (Semester), ST00234 (9 Week)
8977	Tech Engineering Exploration III	ST00242 (Year), ST00241 (Semester), ST00240 (9 Week)
8978	Transportation Exploration	ST00296 or choose one below:
8978	Flight and Space (Gateway)	ST00089
8978	Tech Engineering Exploration I	ST00230 (Year), ST00229 (Semester), ST00228 (9 Week)
8978	Tech Engineering Exploration II	ST00236 (Year), ST00235 (Semester), ST00234 (9 Week)
8978	Tech Engineering Exploration III	ST00242 (Year), ST00241 (Semester), ST00240 (9 Week)

Cluster → Pathway → State Program → Course
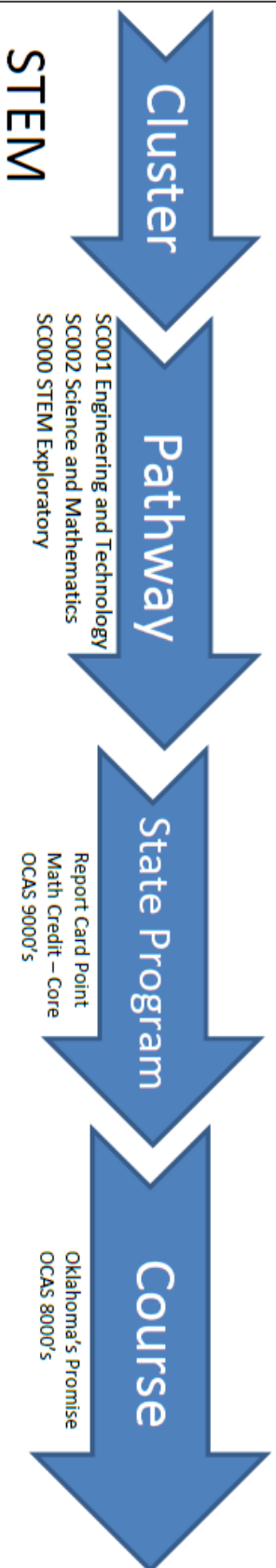
STEM

Cluster:
8700 - 8800   STEM

Pathways CESI Codes:
SC001   Engineering and Technology
SC002   Science and Mathematics
SC000   Science, Technology, Engineering and Mathematic Exploratory

FY24 OCAS Subject Codes - STATE PROGRAMS

9850	**Science, Technology, Engineering and Mathematics**
9852	Biomedical Science and Medicine Program
9870	Biomedical Science and Medicine Program - Advanced
9862	Pre-Engineering Program
9871	Pre-Engineering Program -Advanced
9872	Biotechnology Program
9873	Biotechnology Program - Advanced
9874	Computer Science Program
9875	Computer Science Program - Advanced
9878	Robotics Engineering
9879	Aerospace Program
9880	Aerospace Program – Advanced

FY24 OCAS Course Codes – ALL COURSE CODES

CareerTech Codes   All *CareerTech* Course begin with 8000's (https://oklahoma.gov/careertech/educators/stem/course-information.html)
Academic Codes   Math & Science have SDE codes

Financial Codes
Detailed Expenditure Reports   Middle/High School
    Project Code   412
    Salary Supplement   411
    STEM Program Code   315

Financial Codes
Technology Center
850 Engineering and Technology
851 Science and Mathematics Pathways
Program Code 1715

SC001 Engineering and Technology
SC002 Science and Mathematics
SC000 STEM Exploratory

Report Card Point
Math Credit – Core
OCAS 9000's

Oklahoma's Promise
OCAS 8000's

OKLAHOMA CareerTech

STEM
Science, Technology, Engineering & Mathematics
TSA student organization
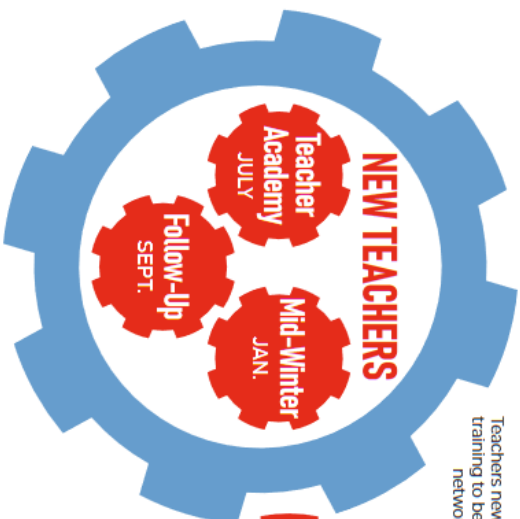
Program Requirements

TSA OKLAHOMA
TECHNOLOGY STUDENT ASSOCIATION
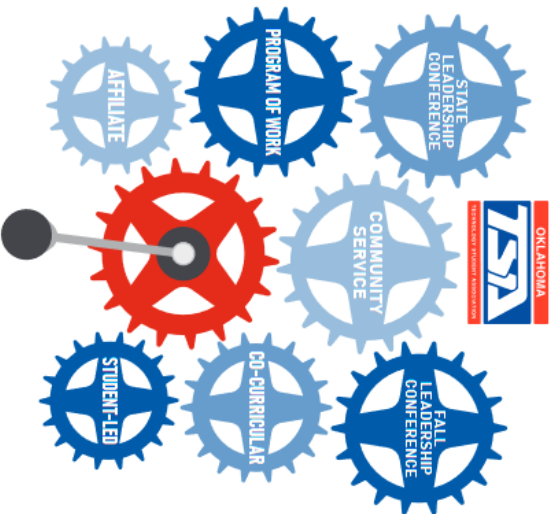
CAREERTECH STUDENT ORGANIZATIONS

All CareerTech teachers must have an active CareerTech Student Organization. TSA is the student organization that aligns to STEM.

- AFFILIATE
- PROGRAM OF WORK
- STATE LEADERSHIP CONFERENCE
- COMMUNITY SERVICE
- STUDENT-LED
- CO-CURRICULAR
- FALL LEADERSHIP CONFERENCE

REPORTS

- **412 funding** *STEM 315*
- **Salary and schedule** *September*
- **CESI** *Student enrollment, October*
- **Student completion** *Seniors follow-up, November*
- **OCAS codes** *8000*
- **CTIMS** *https://ctims.okcareertech.org/CTBDSWeb/*

FUNDING

- **STEM Program 412 annual funding** *Equipment, supplies, professional development*
- **STEM Teacher 411 annual stipend**
- **Lottery grants** *Receive every other year*
- **Innovative grants** *Opens every two years*

PROFESSIONAL DEVELOPMENT

Teachers new to CareerTech attend new teacher training to become familiar with CareerTech and network with other STEM teachers.

NEW TEACHERS
- Teacher Academy JULY
- Follow-Up SEPT.
- Mid-Winter JAN.

CareerTech teachers annually attend Oklahoma Summit, a collaborative conference planned by OKACTE and CareerTech.

Summit ANNUALLY

STEM COURSES

CareerTech STEM programs teach STEM-approved courses and schools report all courses using 8000 level codes.

- 8000 CODE
- IMPACT
- CERTIFICATION
- TRAINING
- WORK-BASED LEARNING
- SYLLABI
- INDUSTRY-ALIGNED
- RESOURCES

ADVISORY COMMITTEE

CareerTech Programs must hold at least one advisory committee meeting each year. The committee should help with curriculum and equipment decisions.

- CURRICULUM
- ANNUALLY
- EQUIPMENT
- PARENT/TECH CENTER
- 50% INDUSTRY

CareerTech WBL Partnership
Express Employment Professionals

About Work-Based Learning

Work-based learning is a tool that allows the Oklahoma CareerTech System to provide a higher level of engagement and relevance for our students. One key to WBL success is the willingness of employers to provide paid internships for students to learn and master their skills at the workplace. For some employers, concerns about liability, workers' compensation insurance and a lack of comfort in the process are barriers to prevent them from participating in WBL.

Express Employment Professionals can remove these barriers and provide additional services to potential WBL employers, students and schools.

Why Participate?

- Express Employment Professionals is the actual employer of the WBL student and covers the required workers' compensation insurance and liability.

  The onboarding and off-boarding processes are covered by Express Employment Professionals:
  - I-9, W-2, FICA.
  - Drug testing (if required).
  - Termination and unemployment.

- Students can experience multiple employers and even multiple industries during their WBL experiences.

- A poor fit between employer and intern can result in a simple reassignment to another WBL opportunity and not require a termination.

- Both the school and Express Employment Professionals have a vested interest in WBL student success.

- The combined resources of the school and Express Employment Professionals provide a higher level of career development.

The CareerTech – Express WBL process may be statewide in general design, marketing and recruitment, but execution will require local connection and customization to be successful. Each local Express agency will work with the schools in it's area to create individualized plans to fit each student, employer and school.

OKLAHOMA CareerTech WBL

For more information, visit okcareer.tech/wbl.

Express EMPLOYMENT PROFESSIONALS

https://oklahoma.gov/careertech/educators/work-based-learning/express-wbl-partnership.html

Process

- **School Determines When Student Is Ready For Work-Based Learning.**
  - Student should have enough foundational technical skills to be successful.
  - Student should be prepared for job search (interview skills and resume).
- **Student, School or Employer Notifies Local Express Office About Desire To Participate.**
- **Students Interview with Employers.**
- **Student/Guardian, School and Employer Complete WBL Agreement.**
  - WBL learning objectives are identified.
  - Evaluation process is identified.
- **WBL Experience Begins.**

Partner's Roles

Roles of the School

- Provide structured occupational education and connections with industry to provide career awareness, career exploration and career experiences that prepare students for the world of work.
- For youth under 18 years old, confirm the suitability of the WBL placement by researching federal and state child labor laws.
- Ensure the student has a transportation plan for getting to and from the workplace.
- Encourage technology center adult students to research the staffing agency WBL option as a viable solution for gaining experience.

Roles of Express

- Provide WBL point of contact for schools and students interested in paid internships.
- Provide all customary onboarding and employment services provided to typical employees.
- Serve on local CareerTech advisory boards or business and industry councils.

Roles in Partnership

- Recruit and identify WBL opportunities with local employers.
- Create individualized WBL agreements identifying the learning objectives targeted during the WBL experience, expected timeline and identified completion criteria for the WBL.
- Participate in marketing and promoting the partnership to students, parents and employers.
- Communicate and report student performance data to document adherence to the WBL agreement.
- Encourage WBL students to pursue and achieve stackable credentials and industry certifications.

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CHOOSING COMPETITIONS

OKLAHOMA

TSA

TECHNOLOGY STUDENT ASSOCIATION

TSA's program of activities enhances student education through its STEM-based competitions, which promote work-based learning and hands-on experiences. Competitions can be integrated easily into the classroom curriculum. They can be used as an additional resource for career pathway initiatives or ICAP. Through TSA's competitions, student members have the opportunity to develop real-world skills, strengthen their leadership abilities and explore career opportunities.

The competitions listed below are grouped in categories. However, some competitions could fit into multiple categories. To see the careers associated with each competition, go to https://www.oktsa.org/competitive-event-information and click on the name of the competition you are interested in.

Middle School Competitions

Architecture and Construction Technology
Construction Challenge
Off the Grid
Project Fair**
Structural Engineering

Communications Technology
Challenging Technology Issues
Children's Stories
Creed**
Essays on Technology
Prepared Speech
Promotional Marketing

Computer Science and Information Technology
Coding
Cybersecurity
Data Science and Analytics
Foundations of IT
 Web Design

Leadership
Career Prep
Chapter Team
Community Service Video
Leadership Strategies
Tech Bowl

Manufacturing and Transportation Technology
Catapult
Dragster
Drone Challenge
Flight
Junior Solar Sprint
Mass Production
Mechanical Engineering
Microcontroller Design
VEX IQ Challenge

STEM (General)
CAD Foundations
Electrical Applications
Inventions and Innovations
Problem-Solving
Rube Goldberg**
Technical Design
Video Game Design

STEM and the Arts
Comic Book Design**
Digital Photography
Pin Design**
STEM Animation
T-shirt Design**

Technology and Research
Biotechnology
Forensic Technology
Medical Technology
System Control Technology

High School Competitions

Architecture and Construction Technology
Architectural Design
Computer-Aided Design, Architecture
Computer-Aided Design, Engineering
Project Fair**
Structural Design and Engineering

Communications Technology
Audio Podcasting
Children's Stories
Debating Technological Issues
Essays on Technology
Promotional Design

Computer Science and Information Technology
Coding
Data Science and Analytics
Geospatial Technology
Software Development
Virtual Reality Visualization (VR)
Webmaster

Leadership
Career Prep**
Chapter Team
Extemporaneous Speech
Future Technology and Engineering Teacher
Prepared Presentation
Technology Bowl

Manufacturing and Transportation Technology
Catapult
Dragster Design
Flight Endurance
Manufacturing Prototyping
Senior Solar Sprint
Transportation Modeling
Drone Challenge (UAV)
VEX Robotics

STEM (General)
Engineering Design
Technology Problem-Solving
Video Game Design

STEM and the Arts
Animatronics
Board Game Design
Comic Book Design**
Digital Video Production
Fashion Design and Technology
Music Production
On Demand Video
Photographic Technology
Pin Design**
T-shirt Design**

Technology and Research
Biotechnology Design
Forensic Science
System Control Technology

OKLAHOMA CareerTech

STEM Science, Technology, Engineering & Mathematics

**Oklahoma-only competitions