



The University of Texas at Tyler
**UNIVERSITY
ACADEMY™**

Career and Technical Education Handbook

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Non-Discrimination Notice

UT Tyler University Academy offers career and technical education programs in Architecture & Construction, Multidisciplinary, and STEM-related fields. Admission to these programs is based on being on track to meet Foundation High School Program, House Bill 5, state requirements for high school graduation as well as any prerequisite courses needed depending on the chosen field.

It is the policy of UT Tyler University Academy not to discriminate on the basis of race, color, national origin, sex or handicap in its vocational programs, services or activities as required by Title VI of the Civil Rights Act of 1964, as amended; Title IX of the Education Amendments of 1972; and Section 504 of the Rehabilitation Act of 1973, as amended.

It is the policy of UT Tyler University Academy not to discriminate on the basis of race, color, national origin, sex, handicap, or age in its employment practices as required by Title VI of the Civil Rights Act of 1964, as amended; Title IX of the Education Amendments of 1972; the Age Discrimination Act of 1975, as amended; and Section 504 of the Rehabilitation Act of 1973, as amended.

UT Tyler University Academy will take steps to assure that lack of English language skills will not be a barrier to admission and participation in all educational and vocational programs.

For information about your rights or grievance procedures, contact the Title IX Coordinator and/or the Section 504 Coordinator.

Endorsements

The UT Tyler University Academy offers two endorsements, multidisciplinary and STEM. The STEM endorsement is available via two pathways, biomedical and engineering. The PLTW courses aligned with each STEM pathway are CTE courses. The multidisciplinary path can be a combination of biomedical, engineering, and other elective courses.

Programs of Study

The 7th and 8th-grade students are often enrolled in Gateway to Technology, Project Lead the Way, courses. These courses are referred to as GTT1 and GTT2 and consist of modules such as Design and Modeling, Flight and Space, Energy and the Environment, Automation and Robotics, Green Architecture and Medical Detectives.

- GTT1
- GTT2

Students attending the Tyler, Longview, and Palestine campuses take Computer Science as their foreign language credit beginning in 9th grade and continuing in 10th grade.

- Computer Science 1 (TACS1)
- Computer Science 2 (TACS2)

When entering 9th grade, students choose their STEM endorsement pathway from the following two career and technology education options:

Engineering Pathway

- Introduction to Engineering Design
- Principles of Engineering
- Civil Engineering
- EDD

Biomedical Science Pathway

- Principles of Biomedical Science
- Human Body Systems
- Medical Interventions
- Biomedical Innovations

CTE Curriculum and Resources

PLTW Engineering Pathway

Affordable housing design. Biofuel production. App development. These are all hands-on, real-world challenges students face in their PLTW Engineering courses. Throughout the program, students step into the varied roles engineers play in our society, discover new career paths and possibilities, and develop engineering knowledge and skills. In addition, as students work in teams to design and test solutions, they're empowered to develop in-demand, transportable skills like collaboration, critical thinking, and communication.

Introduction to Engineering and Design

Students dig deep into the engineering design process, applying math, science, and engineering standards to hands-on projects. They work both individually and in teams to design solutions to a variety of problems using 3-D modeling software, and use an engineering notebook to document their work.

Civil Engineering and Architecture

Students learn important aspects of building and site design and development. They apply math, science, and standard engineering practices to design both residential and commercial projects and document their work using 3-D architectural design software.

Principles of Engineering

Through problems that engage and challenge, students explore a broad range of engineering topics, including mechanisms, the strength of structures and materials, and

automation. Students develop skills in problem-solving, research, and design while learning strategies for design process documentation, collaboration, and presentation.

Engineering Design and Development

The knowledge and skills students acquire throughout PLTW Engineering come together in Engineering Design and Development as they identify an issue and then research, design, and test a solution, ultimately presenting their solution to a panel of engineers. Students apply the professional skills they have developed to document a design process to standards, completing Engineering Design and Development ready to take on any post-secondary program or career.

PLTW Biomedical Pathway

Working with the same equipment and tools used by lab professionals, PLTW Biomedical Science students are empowered to explore and find solutions to some of today's most pressing medical challenges. Through scaffolded activities that connect learning to life, students step into the roles of biomedical science professionals and investigate topics including human medicine, physiology, genetics, microbiology, and public health. Students work together in teams to find unique solutions, and in the process, learn in-demand, transferable skills like critical thinking and communication.

Principles of Biomedical Science

In this course, students explore concepts of biology and medicine as they take on roles of different medical professionals to solve real-world problems. Over the course of the year, students are challenged in various scenarios including investigating a crime scene to solve a mystery, diagnosing and proposing treatment to patients in a family medical practice, to tracking down and containing a medical outbreak at a local hospital, stabilizing a patient during an emergency, and collaborating with others to design solutions to local and global medical problems.

Human Body Systems

Students examine the interactions of human body systems as they explore identity, power, movement, protection, and homeostasis in the body. Exploring science in action, students build organs and tissues on a skeletal Maniken®; use data acquisition software to monitor body functions such as muscle movement, reflex and voluntary action, and respiration; and take on the roles of biomedical professionals to solve real-world medical cases.

Medical Interventions

Students follow the life of a fictitious family as they investigate how to prevent, diagnose, and treat disease. Students explore how to detect and fight infection; screen and evaluate the code in human DNA; evaluate cancer treatment options; and prevail when the organs of the body begin to fail. Through real-world cases, students are exposed to a range of interventions related to immunology, surgery, genetics, pharmacology, medical devices, and diagnostics.

Biomedical Innovation

In the final course of the PLTW Biomedical Science sequence, students build on the knowledge and skills gained from previous courses to design innovative solutions for the most pressing health challenges of the 21st century. Students address topics ranging from public health and biomedical engineering to clinical medicine and physiology. They have the opportunity to work on an independent project with a mentor or advisor from a university, medical facility, or research institution.

PLTW Computer Science Curriculum**Computer Science Essentials**

Students will experience the major topics, big ideas, and computational thinking practices used by computing professionals to solve problems and create value for others. This course will empower students to develop computational thinking skills while building confidence that prepares them to advance to Computer Science Principles and Computer Science A.

Computer Science Principles

Using Python® as a primary tool, students explore and become inspired by career paths that utilize computing, discover tools that foster creativity and collaboration, and use what they've learned to tackle challenges like app development and simulation. *This course is endorsed by the College Board, giving students the opportunity to take the AP Computer Science Principles exam for college credit.*

Computer Science A

Students cultivate their understanding of coding through analyzing, writing, and testing code as they explore concepts like modularity, variables, and control structures. *This course is endorsed by the College Board, giving students the opportunity to take the AP Computer Science A exam for college credit.*

Professional Development

PLTW Teachers attend core training for each course he/she teaches prior to the start of the course. PLTW Core Training immerses teachers in a hands-on, collaborative learning environment that challenges them to look at their classrooms in a new way. Teachers take on the role of a student, engage in an in-depth exploration of PLTW coursework, and gain invaluable experience to take back to their classrooms.

PLTW Core Training helps teachers build skills and confidence around activity-, project-, and problem-based (APB) learning; prepares educators to become facilitators and coaches, and empowers them to bring learning to life through their PLTW program.

CTE Advisory Board

The UT Tyler Advisory Board assists educators in establishing, operating, and evaluating the CTE program which serves the needs of students, business and industry,

and provides expertise pertaining to technological change. The UT Tyler Advisory Board will meet once in the Fall and once in the Spring. The committee will focus on the following:

- Provide an opportunity for discussion among people in education, business and industry
- Focus on how to improve CTE and make the most of the community resources that are available
- Strive to improve the relationships between CTE, business, and community
- Provide expertise to the program by reviewing curriculum, facilities, budget, student competencies, and student placement in related occupations
- Provide an advocate for the CTE programs within a school district

The UT Tyler Advisory Board will consist of individuals that represent the following roles:

- Representative of business or industry
- Parents
- Academic teachers
- School administrators

CTE Student Organizations

UT Tyler University Academy may use federal career and technical education funds to provide opportunities for student participation in approved student leadership organizations and assist career and technical student organizations in accordance with all applicable federal and state laws, rules, and regulations. However, students shall not be required to join such an organization. Student participation in career and technical student organizations shall be governed in accordance with 19 TAC Chapter 76 (relating to extracurricular activities).

The following career and technical student organizations are recognized by the U.S. Department of Education and the TEA:

1. Business Professionals of America (BPA);
2. DECA;
3. Future Business Leaders of America (FBLA);
4. Future Educators Association (FEA);
5. FFA;
6. Family, Career, and Community Leaders of America (FCCLA);
7. Health Occupations Students of America (HOSA);
8. Technology Student Association (TSA); and
9. Skills USA.

Staff Directory

District		
Executive Director of Curriculum- Jaclyn Pedersen, jpedersen@uttyler.edu		
Academic Counselor- Kathy Parker, KathyParker@uttyler.edu Linda Butler, lbutler@uttyler.edu		
Longview	Tyler	Palestine
Biomedical Teacher- Patricia Davis, pdavis@uttua.org	Biomedical Teacher- Oscar Urieta, ourieta@uttua.org	Biomedical Teacher- Jenny Calk, jcalk@uttua.org
Patricia McGaughey, pmcgaughey@uttia.org	Computer Science- Michael Vogt, mvogt@uttua.org	Engineering Teacher- Tim Kennedy, timkenedy@uttyler.edu
Engineering Teacher- Jason Mcgregor, jmcgregor@uttua.org	Engineering Teacher- En-Tze Chong, echong@uttua.org	Computer Science- Michael Vogt, mvogt@uttua.org
Computer Science Teacher- Justin Jenkins, jjenkins@uttia.org	GTT Teacher- Amy Pierson, apace-pierson@uttua.org	Joanna Rowley, jrowley@uttua.org
GTT Teacher- Heather Davis, heatherdavis@uttia.org	Samantha Ferguson, sferguson@uttia.org	GTT Teacher- Forest Warren, fwarren@uttia.org
Kayla Sutton, kclark@uttia.org		

Certification Requirements

PLTW Teachers have a high school certification in a STEM area. Examples of STEM certifications include math, biology, chemistry, physics, computer science, and engineering.

Safety Requirements

Each CTE course completes a lesson on lab safety and signs a Student Laboratory Safety Agreement. Additionally, the agreement is sent home for students and parents to review

together, and the parent signs that they have read the agreement, are aware of the safety measures put in place to protect their student, and will communicate with their child the importance of following all safety rules.

Funding & Purchasing

The CTE allotment is spent on salaries for teachers instructing classes that receive CTE funding. The remaining funds are spent on services and supplies for the CTE-funded classes. The district follows the purchasing guidelines set in the UT Tyler Procurement Procedural Manual.

Inventory

Inventory is purchased to meet the requirements of the PLTW CTE courses offered in the district. The inventory is taken at the end of each school year to include PLTW materials and science classroom materials. The district also complies with all inventory procedures in the State Property Accounting Process User Guide as well as those identified by the UT Tyler Procurement Services.

Access and Equity

A student with a disability shall be provided career and technical education in accordance with all applicable federal laws and regulations including the Individuals with Disabilities Education Act (“IDEA”) and its implementing regulations, state statutes, and rules of the State Board of Education and the Commissioner of Education (“Commissioner”).

A student with a disability shall be instructed in accordance with the student’s Individualized Education Program (“IEP”), in the least restrictive environment, as determined by the student’s admission, review, and dismissal (“ARD”) committee. If a student with a disability is unable to receive a free appropriate public education (educational benefit) in a regular career and technical education program, using supplementary aids and services, the student may be served in separate programs designed to address the student’s occupational/training needs, such as career and technical education for students with disabilities.

A student with a disability identified in accordance with the IDEA is an eligible participant in career and technical education when the following requirements are met:

1. The ARD committee shall include a representative from career and technical education, preferably the teacher, when considering initial or continued placement of a student in career and technical education program;

2. Planning for the student shall be coordinated among career and technical education, special education, and state rehabilitation agencies and should include a coherent sequence of courses;
3. UT Tyler University Academy shall monitor to determine if the instruction being provided to a student with a disability in career and technical education classes is consistent with the student's IEP;
4. UT Tyler University Academy shall provide supplementary services that each student with a disability needs to successfully complete a career and technical education program, such as curriculum modification, equipment modification, classroom modification, supportive personnel, and instructional aids and devices;
5. UT Tyler University Academy shall help fulfill the transitional service requirements of the IDEA and implement regulations, state statutes, and rules of the Commissioner for each student with a disability who is completing a coherent sequence of career and technical education courses.
6. When determining placement in a career and technical education classroom, the ARD committee shall consider a student's graduation plan, the content of the individual transition plan, the IEP, including the consideration of transition services, and classroom supports. Enrollment numbers should not create a harmful effect on student learning for a student with or without disabilities in accordance with the provisions in the IDEA and its implementing regulations.