Engineering

Instructor: Julie Dalton jdalton@tcsdms.org

For more information contact:

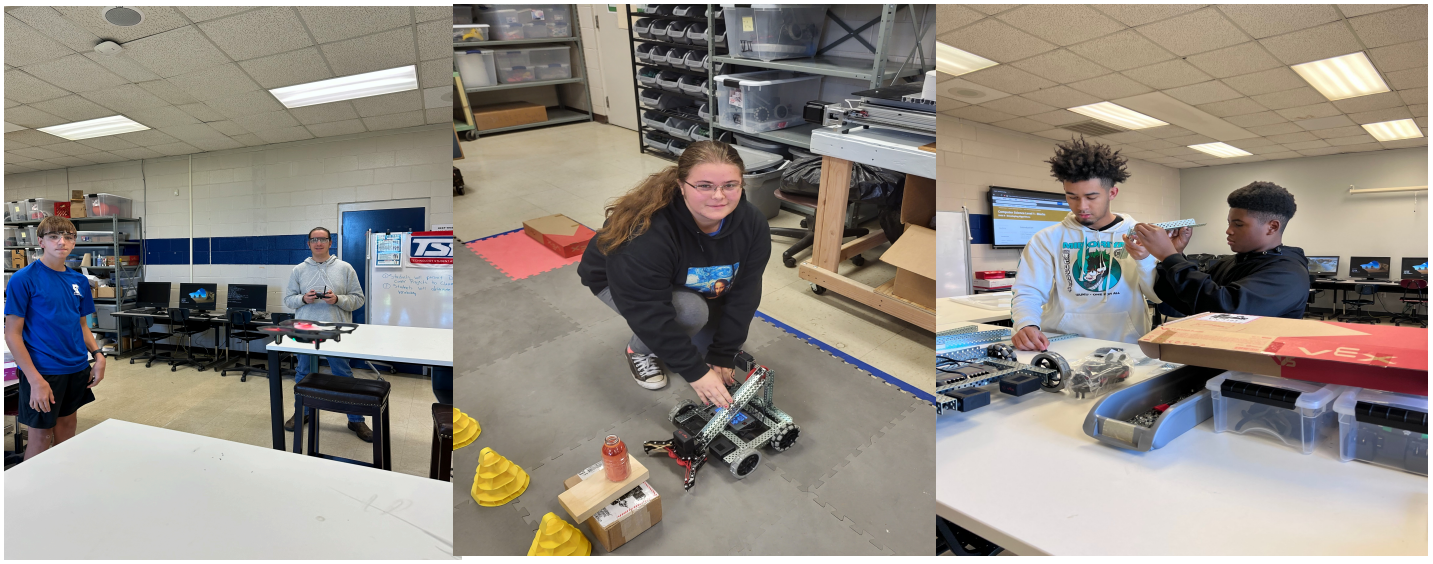
Linda Putt, CTC Counselor lputt@tcsdms.org

Misty Lacefield, SSC mlacefield@tcsdms.org

165 W. Central Avenue

Coldwater, MS 38618

662-622-5142



Engineering and Mechatronics is a program in pre-engineering, robotics, and automated manufacturing for high school students. The purpose of the program is to provide pupils with expanded knowledge of the use of critical thinking, analysis, problem solving, and technological skills and to enable them to apply knowledge in a technological context. Hands-on experiences related to the application of engineering concepts in the workplace are central to all portions of this course. Students will develop academic, 21st century, and human relations skills and competencies that accompany technical skills for job success to help foster lifelong learning. Students who complete the program will be better prepared to enter and succeed in the engineering and STEM-related workforce or programs offered by Mississippi community and junior colleges, as well as institutions of higher education.

Types of Engineers	Average Annual Salary
Marine Engineer	$74,219
Industrial Engineer	$78,626
Mechanical Engineer	$80,118
Computer Engineer	$80,674
Chemical Engineer	$81,092
Civil Engineer	$82,280
Electrical Engineer	$87,174

Course Descriptions

Engineering I

Engineering I teaches students about student organizations and introduces them to the engineering design process along with ethical and safe practice standards. Concepts of 3D sketching and modeling by hand and with CAD software are introduced within the context of engineering design and prototype development.

Unit Number	Unit Name	Hours
1	Orientation and Student Organizations	10
2	Ethics and Safety	10
3	Engineering Design Process	15
4	Computer Aided Design and Drafting I	80
5	Introduction to Mechanical Systems and Robotics	90
6	Computer Aided Design and Drafting II	25
7	Engineering Careers and Technical Writing	25
Total		255

Engineering II

Engineering II is a comprehensive course that focuses on Advanced CAD modeling and simulations. It also introduces students to modern manufacturing systems, or how robotics and drafting work together to create products. Electrical, fluid, and thermal systems are covered in more detail due to their relevance in real-world applications and industry. Additionally, the course teaches students advanced robotic concepts.

Unit Number	Unit Name	Hours
8	Safety Review	5
9	Advanced Computer Aided Design	20
10	Modern Manufacturing Systems	40
11	Advanced Robotics	65
12	Electrical Systems	50
13	Fluid Power Systems	25
14	Thermal Systems	20
15	Capstone	10
Total		235

Applied Academic Credit

Students who complete both Engineering I and Engineering II will receive four credits, two of which can be used as science credits towards graduation requirements once the program is completed.

National Certification

Engineering II students will complete SOLIDWORKS National Certification Test during the 2nd semester.

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Amy Williams, Title IX and Grievance Contact
awilliams@tcsdms.org
662-562-5861
The following person has been designated as the Section 504/ Disabilities Act compliance officer and will handle inquiries regarding the discrimination on the basis of disabilities:
Kristie Foster, 504 Coordinator
kfoster@tcsdms.org
662-562-5861
***** A lack of English language skills is not a barrier to participation in any course at the Senatobia-Tate County Career & Technical Center.***