

Course Description

This summer course will provide practical experiences and research in a technological system in communication, construction, manufacturing or transportation/energy.

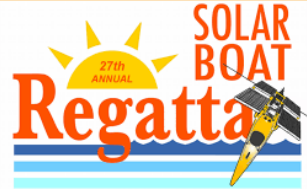
The course will be divided into two sections. Day one will be an overview of middle school and high school level competitions including:

- VEX Robotics
- FIRST Robotics
- Skills USA
- Solar Boat Regatta
- Supermileage Challenge

Days 2-3 will be a deep dive into the steps to start, maintain and grow a team or club. At the end of training, participants will have the knowledge and basic skills to manage a team in their school or organization.



MINNESOTA RENEWABLE ENERGY SOCIETY



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DEPARTMENT OF
ENVIRONMENTAL AND
TECHNOLOGICAL STUDIES
ST. CLOUD STATE UNIVERSITY

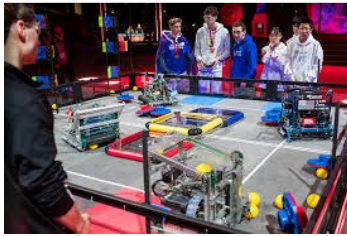
STUDENT
COMPETITIONS
COURSE

ETS 414/514

June 27-29, 2023



VEX Robotics



Students are given a new challenge annually, and must design, build, program, and drive a robot to complete the challenge as best as they can. The robotics teams that consistently display exceptional mastery in these areas will eventually progress to the VEX Robotics World Championship.

There are three leagues of VEX robotics competitions meant for different age groups and skill levels:

VEX V5 is for middle and high school students.

VEX IQ is for elementary and middle school students.

VEX AI is an advanced robotics program for high school and university students.

FIRST Robotics

Combining the excitement of sport with the rigors of science and technology. High-school student participants call it “the hardest fun you’ll ever have.”

Under strict rules, limited time and resources, teams of students are challenged to raise funds, hone teamwork skills, and build and program industrial-size robots to play a difficult field game against like-minded competitors. It’s as close to real-world engineering as a student can get. Volunteer professional mentors lend their time and talents to guide each team. The season ends with a *FIRST* Championship.

Skills USA

SkillsUSA is a career and technical student organization serving more than 395,000 high school, college and middle school students enrolled in training programs in trade, technical and skilled service occupations.

SkillsUSA offers competitive activities in which students strive to achieve in a variety of occupational skill and leadership areas. Competition in skill and personal achievement is encouraged at all levels.

Occupational skill contests include the building trades, health occupations, automotive technology, the electrical/electronics industry and personal services.

Solar Boat Regatta



Teams demonstrate knowledge of science, technology, engineering and math to

design and build boats powered by the sun. They compete in a number of races, culminating with a one-hour endurance race.

This event is open to middle and high school students. Students will work with solar generated electricity, wiring, motors, fluid dynamics, boat design, construction, and teamwork. By racing the solar powered boat that they have built, students experience the thrill of competition and the pride of accomplishment that comes with creating something useful and fun.

Supermileage Challenge



The objective of this competition is to provide Career Technical Education students and MTEEA Clubs

with a challenging project that allows practical experience in design, fabrication, and testing.

The Supermileage Challenge is a fuel economy competition for technology students. Competing teams are challenged to build a one-person, fuel-efficient vehicle powered by a single cylinder four-stroke cycle engine or an electric powered vehicle. There are 5 divisions: Pro Sport, Super Sport, E-85, Urban Concept and Plug in Electric classes. The competition takes place in May at Brainerd Internal Raceway.

Challenge
Your Students

The Student Competitions Course will take place at St. Cloud State University

Course can be taken at undergraduate (ETS 414) or graduate level(ETS 514). CEU’s available.

Training will take place at Headley Hall on campus.

Address questions to Mike Sundblad, mhsundblad@stcloudstate.edu