



## Approved Innovative Course

- *Districts must have local board approval to implement innovative courses*
- *Innovative courses may meet state elective credit only*
- *CTE Innovative courses may not be the final course in a coherent sequence for an endorsement*
- *Course requirements must be met without modification*

*Course: Aerospace Engineering*

*PEIMS Code: N1303745*

*Abbreviation: AERO*

*Grade Level(s): 9-12*

*Number of Credits: 1.0*

### *Course description:*

PLTW Aerospace Engineering ignites students' learning in the fundamentals of atmospheric and space flight. Aerospace Engineering is one of the specialization courses in the PLTW Engineering program. The course deepens the skills and knowledge of an engineering student within the context of atmospheric and space flight. Students explore the fundamentals of flight in air and space as they bring the concepts to life by designing and testing components related to flight such as an airfoil, propulsion system and a rocket. They learn orbital mechanics concepts and apply these by creating models using industry-standard software. They also apply aerospace concepts to alternative applications such as a wind turbine and parachute. Students simulate a progression of operations to explore a planet, including creating a map of the terrain with a model satellite and using the map to execute a mission using an autonomous robot.

### *Teacher qualifications:*

An assignment for Aerospace Engineering is allowed with one of the following certificates as well as successful completion of the Project Lead The Way's Core Training requirements for Aerospace Engineering.

PLTW Core Training:

PLTW's Core Training requires approximately 90 hours of instruction led by PLTW approved Master Teachers. Course mastery is demonstrated by the submission and approval of a course portfolio that meet's PLTW's requirements. After successful completion of Core Training, teachers receive access to the National PLTW Engineering Professional Learning Community, course-specific student and classroom instructional resources, and Ongoing Training resources through the PLTW Content Management System.

- Master Science Teacher (Grades 8-12).
- Mathematics/Physical Science/Engineering: Grades 6-12.



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- Mathematics/Physical Science/Engineering: Grades 8-12.
- Physical Science: Grades 6-12.
- Physical Science: Grades 8-12.
- Physics/Mathematics: Grades 7-12.
- Physics/Mathematics: Grades 8-12.
- Science: Grades 7-12.
- Science: Grades 8-12.
- Science, Technology, Engineering, and Mathematics: Grades 6-12.
- Secondary Industrial Arts (Grades 6-12).
- Secondary Industrial Technology (Grades 6-12).
- Secondary Physics (Grades 6-12).
- Secondary Science (Grades 6-12).
- Secondary Science, Composite (Grades 6-12).
- Technology Education: Grades 6-12.
- Master Mathematics Teacher (Grades 8-12).
- Mathematics: Grades 7-12.
- Mathematics: Grades 8-12.
- Secondary Mathematics: Grades 6-12
- Secondary Physical Science (Grades 6-12)
- Trade and Industrial Education: Grades 6-12. This assignment requires appropriate work approval.
- Trade and Industrial Education: Grades 8-12. This assignment requires appropriate work approval.
- Vocational Trades and Industry (Grades 6-12). This assignment requires appropriate work approval.
- Vocational Trades and Industry Pre-Employment Laboratory (Grades 6-12). This assignment requires appropriate work approval.
- Vocational Trades and Industry Co-op (Grades 6-12). This assignment requires appropriate work approval.

### Additional information:

Districts may use these courses only with the approval of Project Lead The Way. All requirements of Project Lead The Way must be met. Please contact Project Lead The Way directly for these requirements:

Project Lead The Way  
Solution Center



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