

## INFORMATION AND FAQ

# PLTW & RECF IRC

We are excited to share with you information about the alignment of PLTW course offerings to the **Robotics Education & Competition Foundation (RECF)** industry recognized credentials (IRCs) for Pre-Engineering and Robotics.

### Key Highlights

- RECF offers two industry certifications: Pre-Engineering and Robotics, designed to address the global need for more students in STEM fields.
- Many states provide funding for student-earned IRCs through CTE/Perkins, and RECF IRCs are currently approved in 14 states.

### Pre-Engineering and Robotics IRC Requirements

	Modules								
	Fundamentals of Engineering	Aerospace Pre-Engineering	Chemical Pre-Engineering	Civil Pre-Engineering	Computer Science/ Programming	Electrical Pre-Engineering	Engineering Technology	Manufacturing Technology	Mechanical Pre-Engineering
Pre-Engineering									
Robotics									

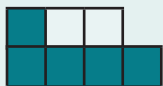
Required for Certificate
  Additional Area Modules (2 required for Pre-Engineering IRC)
  Qualifications for earning both IRC's

Fundamentals of Engineering	Additional Area Modules	Additional Area Modules
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**Pre-Engineering Certifications** are divided into a Fundamentals of Engineering section and eight engineering area modules. To receive an IRC a student must successfully pass the Fundamentals of Engineering certification exam plus two (2) additional modules listed above.

Fundamentals of Engineering	Computer Science/ Programming	Electrical Pre-Engineering	Mechanical Pre-Engineering
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The **Robotics Certification** requires students to pass Fundamentals of Engineering, along with the Computer Science/Programming, Electrical Pre-Engineering, and Mechanical Pre-Engineering exams.



**Note:** Earning the Robotics Certification would **automatically** qualify for the Pre-Engineering Certification because it exceeds the requirements.

## PLTW Course Alignment

Students who have successfully completed PLTW Gateway Modules and/or PLTW High School Engineering courses are well-positioned for the Fundamentals of Engineering exam. Refer to this PLTW and RECF Alignment to see PLTW courses recommended for preparation to pass RECF exams.

## Benefits for Students

- Industry internships and post-secondary schools may give favorable weighting to students with RECF Credentials.
- Students can earn stackable credentials, with each exam completed being added to their certificate.

## RECF Credentials

		Certification Pathway									
		Fundamentals of Engineering	Aerospace Pre-Engineering	Chemical Pre-Engineering	Civil Pre-Engineering	Computer Science/ Programming*	Electrical Pre-Engineering	Engineering Technology	Manufacturing Technology	Mechanical Pre-Engineering	
PLTW Recommended Courses	PLTW Gateway	<ul style="list-style-type: none"> <li>• Design and Modeling</li> <li>• Automation and Robotics</li> <li>• Flight and Space</li> <li>• CompSci for Innovators and Makers</li> <li>• App Creators</li> <li>• Magic of Electrons</li> </ul>						<ul style="list-style-type: none"> <li>• Magic of Electrons</li> </ul>	<ul style="list-style-type: none"> <li>• Magic of Electrons</li> </ul>		<ul style="list-style-type: none"> <li>• Automation and Robotics</li> </ul>
	PLTW Engineering and Computer Science	<ul style="list-style-type: none"> <li>• Introduction to Engineering Design,</li> <li>• Principles of Engineering,</li> <li>• Digital Electronics,</li> <li>• Aerospace Engineering,</li> <li>• Computer Integrated Manufacturing,</li> <li>• Civil Engineering and Architecture,</li> <li>• Computer Science Principles</li> </ul>	<ul style="list-style-type: none"> <li>• Aerospace Engineering</li> </ul>		<ul style="list-style-type: none"> <li>• Civil Engineering and Architecture</li> </ul>	<ul style="list-style-type: none"> <li>• Computer Science Principles*</li> </ul>	<ul style="list-style-type: none"> <li>• Digital Electronics</li> </ul>	<ul style="list-style-type: none"> <li>• Digital Electronics</li> </ul>	<ul style="list-style-type: none"> <li>• Computer Integrated Manufacturing</li> </ul>	<ul style="list-style-type: none"> <li>• Principles of Engineering</li> </ul>	
	Non-PLTW Supporting Resources					<ul style="list-style-type: none"> <li>• Robotics (Programming and Debugging in C*)</li> </ul>	<ul style="list-style-type: none"> <li>• Physical Science</li> <li>• Physics</li> <li>• Robotics</li> </ul>	<ul style="list-style-type: none"> <li>• Physical Science</li> <li>• Physics</li> <li>• Robotics</li> </ul>	<ul style="list-style-type: none"> <li>• Other CTE Curriculum</li> <li>• OSHA Safety Course</li> </ul>	<ul style="list-style-type: none"> <li>• Physical Science</li> <li>• Physics</li> <li>• Robotics</li> </ul>	

\*Computer Science/Programming are partially covered and recommend adding a non-PLTW resource to prepare for exam.

## Frequently Asked Questions

### What certifications does RECF offer?

RECF offers two industry certifications: Pre-Engineering and Robotics, designed to address the global need for more students in STEM fields.

### What is required for students to earn the Pre-Engineering Certification?

Pre-Engineering Certifications consist of a Fundamentals of Engineering section and eight engineering area modules. Students must pass the Fundamentals exam and two additional modules to receive this IRC.

## **What is required for students to earn the Robotics Certification?**

The Robotics Certification requires students to pass the Fundamentals of Engineering, Computer Science/Programming, Electrical Pre-Engineering, and Mechanical Pre-Engineering exams. Earning the Robotics Certification will automatically include the Pre-Engineering Certification because it exceeds the requirements.

## **Is there funding available for students who earn RECF IRCs?**

Many states provide funding for student-earned IRCs through CTE/Perkins, and RECF IRCs are currently approved in 14 states.

## **Which PLTW courses align with the RECF IRCs?**

Refer to the PLTW and RECF Alignment to see PLTW courses recommended for preparation to pass RECF exams.

## **What if students haven't covered all the topics in PLTW courses?**

Additional preparation may be required for topics not covered in PLTW courses, which can be addressed through participation in science courses, other CTE programs, or robotics competitions. Recommendations to meet these needs are noted in the PLTW and RECF Alignment.

## **How can students benefit from earning RECF Certifications?**

Industry internships and post-secondary schools may give favorable weighting to students with RECF Certifications. Students can also earn stackable credentials, with each exam completed being added to their certificate.

## **What can I do to support my students in pursuing RECF IRCs?**

Encourage students to explore RECF IRCs and consider pursuing certifications that align with their interests and career goals. Support students in preparing for IRC exams by reviewing the RECF practice exams and identifying areas where additional preparation may be needed. Currently approved in 14 states.