IT-Adventures Overview

Robotics Curriculum
IT Adventures

Agenda

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- Robotics Overview
- Program Schedule
- Initial Set-Up

IT-Adventures Overview

IT-Adventures is an extra-curricular program for high school students. It is comprised of three different programs which are meant to teach and spark interest in different technology fields.

The three different venues (programs) are:

- Robotics
- Smart-IT
- Cyber Defense

This is the Robotics venue, where students get to experiment with and program their own robot, leading up to the spring competition.

IT-Adventures Program Goals

- Garner interest in technology-related fields
- Increase enrollment of students in IT-related degree programs
- Provide students with the support they need to earn their degree
- Make IT fun!

Robotics Venue

Within the Robotics venue, there is a focus on developing the understanding of…

- Basic programming skills, including general language skills
- Debugging techniques and iterative improvement

The Robotics venue provides an opportunity for students to build and program their robot around a custom challenge in the spring, culminating in the IT-Olympics competition.

Robotics Venue

Throughout the year, students will:

- Learn basic programming concepts and apply them by controlling an interactive robot
- Use these skills to program the robots in novel ways, attempting to complete a longer-term challenge
- Participate in the IT-Olympics challenge, which will contain the long-term challenge and a day-of challenge, requiring students to use their skills and think on their feet

IT-Olympics

At the end of the year, students have the opportunity to compete in the one-day IT-Olympics, which includes the following opportunities:

- Compete in multiple competitions, including a challenge they've prepared for ahead of time and a day-of challenge
- Compete against teams from around Iowa, interacting with students to learn and have fun
- Interact with other venues in the IT-Adventures group

Program Schedule

Month & Week	Lesson	Content
Sept 7	0	Educators and students familiarize themselves with the RVR!
Sept 13	1	Moving the RVR
Sept 20	2	Basic micro:bit I/O
Sept 27	3	Variables
Oct 4	4	If Statements and Conditionals
Oct 11	5	While and For Loops
Oct 18	6	Arrays and For Loops
Oct 25	*Challenge*	*Practice Challenge 1:*
Nov 1	7	Button & Buzzer [Digital I/O]
Nov 8	8	Servo & Slide Dimmer [Analog I/O]
Nov 15		*Catch-up Week*
Nov 22		Thanksgiving Break
Nov 29	9	Proximity Sensor
Dec 6	*Challenge*	*Practice Challenge 2: Factory Robot*
Dec 13		*Catch-up Week*
Return from Winter Break	10	Optional Learning Challenge: Remote Trigger
		Prepare for IT-Olympics Competition
April		*IT-Olympics Competition at ISU!*

Questions? Feel free to reach out to IT-Adventures support staff!

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