

Learning robotics

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DOLLAR BAY - Dollar Bay High School 10th-grade student Tom Dunstan thinks the robotics class he's taking at the school is something which could help him with future employment.

"It's a great thing to get hands-on applications," he said. "Most of this is fun to do."

Dunstan is one of the students in teacher Matt Zimmer's robotics class, which is new at the school this year.

Called the Student Organization of Aquatic Robotics, or SOAR, Zimmer said the class is for ninth to 12th-grade students. The classes are 77 minutes, five days a week for two trimesters.

"It's a general science elective credit," he said.

In order to teach the class, Zimmer said he and Doug Oppliger of the Michigan Technological University Enterprise program went to Traverse City last November for training. The Dollar Bay class is done in conjunction with the Tech Enterprise program.

Zimmer said school officials decided to offer the robotics class for the reason stated by Dunstan.

"We wanted to bring on a more hands-on program," he said.

The reason underwater robotics was chosen in particular was greatly influenced by the school's location, Zimmer said.

"Dollar Bay is right on the water," he said.

Testing of the prototype robots constructed by the students was done at a nearby marina, Zimmer said.

He was impressed with the progress the students have made in the class, despite the newness of it, Zimmer said.

"We're further than I anticipated getting in the first year," he said.

The students are in the process of constructing two underwater rovers for Isle Royale National Park rangers to use to check docks and boats for zebra mussel infestation, which isn't a problem there, yet.

"They're trying to get ahead of the game," he said.

There isn't much time left for the students to finish the project, Zimmer said.

"We're pushing to get those completed by June 3," he said.

The students will make a field trip to Isle Royale to instruct the rangers in the use of the robots, Zimmer said.

The robots are constructed on a frame of PVC pipe and use small bilge pumps mounted with propellers for locomotion, Zimmer said. They will have cameras mounted on them.

The class is broken down into groups for each segment of construction, which are headed by a captain, Zimmer said.

"It's managed like a business start-up," he said. "They're in charge of making sure that (segment) gets built. The captains have to work with each other."

There is no textbook for the class, but Zimmer said students use engineering books and get some information from the Internet. Students make decisions about construction of the robots, and they came up with the idea of using a control unit from a video game to control movement of the robots.

Zimmer said the class is cross-disciplinary, and includes math and language arts.

Although the robots students are constructing now are for underwater use, Zimmer said the other elements will be considered, also.

"We are open to air (robots)," he said. "I don't think it's anymore of a challenge than underwater."

Dunstan said he enjoyed seeing the prototype robots working early in the school year, but it wasn't an easy process.

"It took a little practice to actually get it driving," he said.

Dunstan said the experience he's getting from the class could help him get jobs ranging from mechanic to engineer.

"There's a whole wide range of things you can do with this knowledge," he said.