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{ CHALLENGER INSTITUTE OF TECHNOLOGY }

Car-building project puts students on road to engineering success

STUDENTS undertaking the advanced diploma of mechanical engineering at Perth's Challenger Institute of Technology are honing their skills by designing and building an electric car.

Engineering design takes considerable persistence, problem-solving skills and teamwork, according to Mervyn Wilson, manager of Challenger's engineering program. "The students use current engineering software for the design and project management. When the students are presented with a design requirement, we ask for some unique design aspect.

"We are most interested in the students thinking of innovative solutions to problems," he says.

Last year, students designed a tilting car with the steering controlling the tilt and the wheels turning independently as they balanced the car.

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> **MERVYN WILSON**
> MANAGER OF CHALLENGER'S ENGINEERING PROGRAM

Wilson says the car, which won an award, is unique.

"The concept of the design was to take the limited power available as far as possible. The design centred on maintaining speed around the entire course. To do this the students decided to move the centroid of the car as it turns, as a motorcycle does."

Wilson says the electric engine has always been far more efficient than its petrol counterpart. "It is not the motor that is the issue, it is the storage and release of energy that is a significant issue for any future electric vehicle."

He says if you accept that climate change is due in some part to human endeavours, then it is up to the engineering industry to solve the problems.

"Generating electricity sustainably, making transport more sustainable, ensuring buildings are designed more efficiently and are made from more ecologically friendly products; [these] are all areas which require a dedicated and innovative engineering sector," Wilson adds.

Feedback from the students has been positive.

"There were some rough points during the project, with particular reference to the extra work required to build the car," he says.

"However, I am convinced the students who go through this project are better prepared for their engineering career than if we had not given them the project."

This year, advanced diploma students are refining the car design and have been given the challenge to build the new car from composite materials, such as carbon fibre, says Wilson.

The course is popular with international students and annually between 170 and 200 students from 35 countries study in the engineering field at Challenger. About 18-20 per cent of these students are studying mechanical engineering.

The advanced diploma takes two years to complete and Wilson says many students go on to university or directly into the engineering industry. They can gain employment in roles such as drafting engineers, project managers and on-site supervisors.

Wilson says employers are looking for academic knowledge as well as workshop skills.

Ronak Patel came to Australia in 2009, from Gujarat in India, to pursue a career in mechanical engineering. He was part of the team that designed last year's electric car, and says the process was "a very good experience".

Patel plans to complete a bachelor degree after finishing his advanced diploma, and then hopes to work in Australia as a mechanical engineer.

JULIA STIRLING