Twelve students from Caledonian College have designed and built a battery-run car which can travel up to 80km when fully charged.

MUSCAT: Electric cars could be the norm on Muscat's streets as oil supplies run out, but a group of students at Caledonian College of Engineering have already made one which they will drive in the Shell Eco-marathon in Manila next week.

The Eco-marathon is a competition that challenges students to design, build and drive energy efficient cars. Each year, three regional contests are held in the Americas, Europe and Asia, which is the one in which Caledonian College of Engineering will participate, along with teams from Sultan Qaboos University (SQU) and GItch. Twelve students from Caledonian College, calling themselves 'Team Sardath', headed by Team Leader Nesar Al Nabhan and advised by Mechatronics professor Dr. Aramthakammn R., designed and built a battery-operated car that they believe can travel a distance up to 80km if it's fully charged.

The car is a 'prototype' car, meaning it doesn't look like a normal car but was designed with namic design. The students could have designed an 'Urban Concept' car but the requirements for that include four doors, upright seats, and other features similar to a normal conventional car. The prototype cars, on the other hand, are designed for a single occupant and tend to be low, aerodynamic shapes.

"It's our first time in the contest so we figured it would be easier if we made a prototype car. We could design the car the way we liked. For this category we were given a free hand," explained Muntashir Razzak, adding that a Prototype car also required fewer parts.

The flashy blue car is powered by a 48 volt lithium battery, though the team had the option of choosing an electric car that runs on hydrogen fuel cells, or internal combustion engines that run on petrol, diesel, or liquid fuel made from natural gas and ethanol. The chassis and the tyres are from bicycles.

To accelerate there is a hand-operated control which increases the current sent from the battery to the wheel hub motor. The students, led by electrical engineering major, Titu Bhoumick, designed the motor controller and programmed it for maximising efficiency. To slow down the car is equipped with hydraulic brakes that function like bicycle breaks, squeezed by hand.

"We take it to the max speed and then we coast for a while. Then we increase the current again, so we save power," explained Ommar Almahmoud.

During the competition from February 26 to March 1 the car will undergo safety and technical inspections, and, if it passes them, driver Slum Al Shuieri will have a number of attempts to drive around the track.

Making the transition from driving a normal car to driving the selected as the driver because at 52kg he is the lightest member of the team. "When I was small I was riding a bicycle so I think it's the same function. But here the function is electric while the bicycle was manual," he said. To cover the costs of building the car and attending the competition the team has found some sponsors including Oman Air, PDO, Nuhas Oman in addition to Shell, but they are still looking for others to reduce their expenses in Manila.

The sponsors' logos are attached to the car, giving publicity, and the sponsors will be able to use the car for some of their own events, the students noted, adding that if book at Sadarah CCE. "We aren't representing the college. We are representing the nation, the Arab nation, the Oman nation. Whatever happens there, we would like to support them," said Mohammed.

Designing and building the car has not only been a way for the students to apply the theories they have learned in their classes, but it has made them think deeply about the need for environmentally friendly transportation.

"In the future the oil will finish, for sure. I guess in 10 years everyone will think to save his big car and just buy small cars or even electric cars. We have future view about how we can help to save the environment," said Nesar.

Battery-operated and solar-powered vehicles will be common in the future, the students and their professor believe, so they want to start getting people in introduced to the local market but the students hope to accelerate the process of having purely electrical cars here, too.

"It's a very big challenge for us to be involved in this challenge because the future is in electric cars and we have to change the way people think. We have to use more efficient, more green vehicles. We should use this technology and encourage (people) to use it," said civil engineering student Mohammed Al Amri.

Though the students faced many challenges building their car, from learning about automotive engineering to convincing sponsors to believe in their idea, the car was finally finished and on Tuesday sent to Manila for the Shell Eco-marathon. Photos and video Shaikh A TIMES OF OMAN