

### Curriculum Goals:

To provide the student with the opportunity to explore and experience the work of a mechanical & electrical engineer exposing them to the varied opportunities in mechanical engineering and to assist them in making an informed decision for further study and/or employment. This course is practical and experiential. The student will be given the opportunity to learn through engaging in realistic and authentic tasks. In addition, the student will get the opportunity to build an electric-powered kart as their practical project.

**Vocational Pathway:** Manufacturing and Technology

**Learner Goals and Outcomes:** On completion of this course, the student will be able to:

1. Demonstrate knowledge of safety on engineering worksites.
2. Use a MIG welding plant in the motor industry.
3. Apply good work practices when performing basic fabrication operations under supervision.
4. Demonstrate knowledge of fabrication machinery, materials, and processes.
5. Create and measure automotive series-parallel circuits, and calculate values if power in automotive circuits.

Unit Standards					
Unit No	Title	Level	Credits	Version	SR/R
21684	Use a MIG welding plant in the motor industry.	3	3	2	
21911	Demonstrate knowledge of safety on engineering worksites	2	2	3	SR
24129	Create and measure automotive series-parallel circuits, and calculate values if power in automotive circuits	3	2	2	
29670	Demonstrate knowledge of fabrication machinery, materials, and processes	2	3	1	SR
29730	Apply good work practices when performing basic fabrication operations under supervision	2	6	2	SR
	<b>Total DAS Credits</b>		<b>16</b>		

**Vocational Pathways:** SR = Sector Related; R = recommended

To receive a Vocational Pathways Award, students must gain NCEA Level 2. Within the 80 credits required to achieve NCEA Level 2, 60 of these Level 2 credits must be from the recommended standards in one or more pathways, including 20 Level 2 credits from sector related standards.

**Methods of Assessment:** Four forms of assessment will be used:

1. Written assessment
2. Practical activities and observations
3. Practical demonstrations
4. Group project – electric vehicle build