# Yeronga SHS STEM Academy

At Yeronga State High School, our STEM program covers the 4 STEM disciplines across 3 subjects in a cross disciplinary approach. The curriculum focuses on real-world problem solving through project-based and inquiry-based learning. Yeronga's STEM program centres around University and Industry partnerships that include: University of Queensland (UQ), Queensland University of Technology (QUT), ABCN, Gateways to Industry – Advanced Manufacturing, Gateways to Industry – Minerals and Energy, StyroMax, PARTEC, Artists in classrooms and more.

|  | **Science** | **Technology Engineering** | **Maths** |
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| **Year 7** | **Core:**<br>ACARA with a STEM lens + value add activities (inquiry learning)<br>**Extension:**<br>• Biomedical Science<br>• SPARQ-ed UQ medical workshops | **Technologies (Digital & Design)**<br>• Drone futures – Drones in industry, coding and drone design.<br>• Industry 4.0 Advanced Manufacturing – Recreation Vehicle Design<br>**Extension:**<br>• Excursion to StyroMax – Gateways to Industry<br>• Camper trailer selected and built | **Core:**<br>ACARA with a STEM lens + value add activities (inquiry learning)<br>**Extension:**<br>• Problem Solving Modelling Tasks (PSMT)<br>• Y Connect - Artist in classroom<br>• ABCN Innovate – Microsoft |
| **Year 8** | **Core:**<br>ACARA with a STEM lens + value add activities (inquiry learning)<br>**Extension:**<br>• Biomedical Science<br>• SPARQ-ed UQ medical workshops<br>• Green energy<br>• World Science Festival - Chemistry<br>• STELR kits | **Digital Technologies & Media Arts**<br>• Video Games – 2D platformer<br>• Design & make a retro arcade machine<br>• Build a Raspberry Pi Computer<br>**Extension:**<br>• Australian STEM Video Game Challenge<br>• Netherworld Arcade excursion | **Core:**<br>ACARA with a STEM lens + value add activities (inquiry learning)<br>**Extension:**<br>• Problem Solving Modelling Tasks (PSMT)<br>• Y Connect - Artist in classroom<br>• ABCN Innovate – Microsoft |
| **Year 9** | **Core:**<br>ACARA with a STEM lens + value add activities (inquiry learning)<br>**Extension:**<br>• Biomedical Science<br>• SPARQ-ed UQ medical workshops<br>• Forensic Investigation<br>• Projectile Motion | **Technologies (Digital & Design)**<br>• Robotics<br>• Cybersecurity<br>• Internet of Things (IoT)<br>**Extension:**<br>• Designing with Empathy – Design and prototype a product to meet a clients need.<br>• Industry Excursion – Gateways to Industry | **Core:**<br>Core Australian curriculum with extension with appropriate topics e.g. trigonometry<br>**Extension:**<br>• Celestial Modelling (Algebra)<br>• Cryptology<br> • Linear & polynomial modelling<br> • Computational programming<br> • Problem solving and modelling task (inquiry based) |
| **Year 10** | **Pre-Senior specialisation**<br>• Biology<br>• Physics<br>• Chemistry<br>• Psychology<br>**Extension:** Biomedical Science<br>• SPARQ-ed Research Immersion Program | **Senior Studies**<br>• Study a Senior subject – early start<br>**STEM Project**<br>Individual or group negotiated project<br>• Premier's Coding Challenge<br>• Young ICT Explorers Accelerator Program | **Pre-Senior specialisation**<br>• Pre-General Maths<br>• Pre-Math Methods |

Note: Some of the topics and excursion may change as we continuously improve our curriculum.