



Year 9 iSTEM Cessnock High School – Scope and Sequence

All outcomes referred to in this unit come from the Stage 5 iSTEM School Developed Board Endorsed Course © Cessnock Academy of STEM Excellence, NSW Department of Education 2020 **Note:** To satisfy the requirements of this course, students must undertake a range of practical experiences that occupy the majority of course time.

Term 1	Weeks 1	Weeks 2 - 4	Weeks 5 - 8	Weeks 9 - 10
Unit	Unit: Aeronaut Core Module 1 iSTEM + Process. What is STEM? Why STEM/Careers?	Unit: Aeronaut Core Module 1 & Elective Module 5 STEM Fundamentals & Aerodynamics: Bottle Rockets	Unit: Aeronaut Core Module 1 & Elective Module 5 STEM Fundamentals 1 & Aerodynamics: Power Anchor Planes	Unit: Aeronaut Core Module 1 & Elective Module 5 STEM Fundamentals & Aerodynamics: Power Anchor Cars
Outcomes	5.3.1, 5.7.1	5.1.1, 5.1.2, 5.2.1, 5.2.2, 5.3.1, 5.4.1, 5.4.2, 5.5.1, 5.5.2,	5.1.1, 5.2.2, 5.3.1, 5.4.1, 5.5.1,	5.1.1, 5.1.2, 5.2.1, 5.2.2, 5.3.1, 5.4.1, 5.5.1, 5.6.1, 5.6.2, 5.8.1,
iSTEM Modules	C-1.2	C-1.1, C-2.1, E-5.1, E-5.3, E-5.4, E-5.5	C-1.2, E-5.4, E-5.5	C-1.1, C-1.2, E-5.1, E-5.2, E-5.3, E-5.4, E-5.5
Assessment			Assignment - Bottle Rocket Launch (practical) & iSTEM+ folio	

Term 2	Weeks 1 - 3	Weeks 4 - 8	Weeks 9- 10
Unit	Unit: iBot Core Module 1 Innovation & career investigation (STEM Fundamentals 1)	Unit: iBot Core Module 3 & Elective Module 6 Robotics by design (Motion and Mechatronics)	Unit: Sense-sational Core Module 3 Introduction to computer science, coding & cyber security
Outcomes	5.5.2, 5.7.1,	5.1.1, 5.1.2, 5.2.1, 5.2.2, 5.3.1, 5.3.2, 5.4.1, 5.5.1, 5.6.1, 5.6.2, 5.8.1,	5.1.1, 5.1.2, 5.2.2, 5.3.1, 5.7.1,

Term 2	Weeks 1 - 3	Weeks 4 - 8	Weeks 9- 10
iSTEM Modules	C-1.1	C-1.2, C-2.1, C-2.3, C-3.1, C-3.2, E-6.1, E-6.2, E-6.3, E-6.4, E-6.5	C-1.1, C1.2
Assessment		Assignment – How has local, regional, national & international STEM innovation impacted economic growth and emerging careers?	

Term 3	Weeks 1 - 3	Weeks 3 - 6	Weeks 7 - 10
Unit	Unit: Sense-sational Core Module 1 Introduction to computer science, coding & cyber security	Unit: Sense-sational Core Module 2 & Core Module 3 Introduction to circuits & breadboarding using Arduino (STEM Fundamentals 2 & Mechatronics 1)	Unit: Sense-sational Core Module 3, Elective 7 & Elective Module 9 Interactive exhibit prototype (Mechatronics 1, CAD/CAM & Minor Task)
Outcomes	5.1.2, 5.2.2, 5.3.1, 5.7.1,	5.1.2, 5.2.1, 5.2.2, 5.3.1, 5.5.2, 5.6.1, 5.8.1,	5.1.1, 5.1.2, 5.2.2, 5.4.1, 5.6.1, 5.6.2, 5.8.1
iSTEM Modules	C-1.1, C1.2	C-2.1, C-2.3, C-3.1, C-3.2	C-3.1, C-3.2, E-7.1, E-7.2, E-7.3, E-7.4, E-9.1, E-9.2, E-9.3, E- 9.4, E-9.5
Assessment		Assignment – Coding log of cyber security tutorials & practical Arduino coding challenge	

Term 4	Weeks 1	Weeks 2 - 3	Weeks 4 - 8	Weeks 9 - 10
Unit	Unit: Sense-sational Core Module 3 & Elective Module 9 Interactive exhibit prototype (Minor Task) continued	Unit: Up & Away Core Module 2, Elective Module 5 & Module 11 Drone aerodynamics and Intro to surveying	Unit: Up & Away Core Module 2, Core Module 4 & Elective Module 12 Space habitat design	Unit: Up & Away Core Module 2, Elective Module 12 Rocket launcher prototype
Outcomes	5.1.1, 5.1.2, 5.2.2, 5.4.1, 5.6.1, 5.6.2, 5.8.1,	5.1.2, 5.2.2, 5.3.2, 5.4.2, 5.6.1, 5.6.2, 5.7.1, 5.8.1,	5.1.1, 5.1.2, 5.2.1, 5.2.2, 5.3.1, 5.3.2, 5.4.1, 5.4.2, 5.5.1, 5.5.2, 5.6.1, 5.6.2, 5.7.1, 5.8.1,	5.1.1, 5.1.2, 5.2.1, 5.2.2, 5.3.1, 5.4.2, 5.5.1, 5.6.1, 5.6.2,

Term 4	Weeks 1	Weeks 2 - 3	Weeks 4 - 8	Weeks 9 - 10
iSTEM Modules	C-3.1, C-3.2, E-7.1, E-7.2, E-7.3, E-7.4, E-9.1, E-9.2, E-9.3, E-9.4, E-9.5	C-2.2, C-2.3, E-5.1, E-5.4, E-5.5, E-11.1, E-11.2, E-11.3, E-11.4, E-11.5	C-1.1, C-1.2, C-2.1, C-2.3, C-4.1, C-4.2, C-4.3, E-12.1, E-12.2, E-12.3, E-12.4, E-12.5, E-13.2, E-13.3, E-13.4	C-2.1, C-2.2, C-2.3, E-12.3, E-12.5, E-13.2, E-13.4
Assessment		Assignment – Minor task iSTEM+ portfolio & Sensational prototype demonstration (practical)		