Year 10 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 1-2**	**Weeks 3 - 7**	**Weeks 8 - 11**
Unit	**Unit 1: Remix** Core Module 2, Elective Module 12 Rocket Launcher Prototype (review & modification)	**Unit 1: Remix** Core Module 4 & Elective Module 6 Robotics Industry Design Challenge (Arduino controlled) using iSTEM+ Design Process	**Unit 2: Bio-Design** Core Module 2, Core Module 3 & Elective Module 7 Hydraulic Gripper Project & Fusion 360 CAD
Outcomes	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,	5.1.1, 5.1.2, 5.2.1, 5.2.2, 5.3.1, 5.4.1, 5.5.1, 5.5.2, 5.6.1, 5.7.1, 5.8.1	5.1.1, 5.2.2, 5.4.2, 5.6.2
iSTEM Modules	C-2.1, C-2.2, C-2.3, E- 5.4, E-5.5, E-12.3, E-12.5, E-13.2, E-13.4	C-3.1, C-3.2, C-4.1, C-4.2, C-4.3, E4.1, E-4.2, E-6.2, E-6.3, E-6.4, E-6.5, (Optional) E-8.1 E-8.2, E-8.3, E-8.4, E-8.5	C-2.1, C-2.2, C-2.3, E-8.1, E-8.2, E-8.3, E-8.4, E-8.5
Assessment		**Assignment** – Tetrix Industry Prototype (practical) + Industry Explainer Video	

Term 2	Weeks 1 - 3	Weeks 4 - 6	Week 7 - 10
Unit	**Unit 2: Bio-Design** Core Module 2, Elective Module 14, Elective Module 7 Prosthetic Limb & Biomedical investigation	**Unit 2: Bio-Design** Elective Module 8 Prosthetic Limb 3D Printed Prototypes	**Unit 2: Bio-Design** Core Module 2, Elective Module 4 & Elective Module 8 Prosthetic Arduino or Hydraulic Controlled Limb Prototype
Outcomes	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, 5.7.1, 5.8.1	5.1.2, 5.3.1, 5.4.1, 5.5.2, 5.6.1, 5.6.2, 5.7.1	5.1.2, 5.2.1, 5.2.2, 5.3.1, 5.3.2, 5.4.1
iSTEM Modules	C-1.1, C-1.2, C-2.1, C-2.2, C-2.3, E-14.1, E-14.2. E-14.3, E-14.4, E-14.5	C-1.2, C-2.1, C-2.2, C-2.3, C-3.2, E-8.1, E-8.2, E-8.3, E-8.5	C-1.2, C-2.1, C-2.2, C-2.3, C-3.2, C-4.2, C-4.3, E-8.1, E-8.1, E-8.5
Assessment			**Assignment** – Prosthetic limb iSTEM+ portfolio

Term 3	Weeks 1 - 2	Weeks 3 - 9	Week 9 - 10
Unit	**Unit 3: Let's Get Moving** Core Module 2 & Core Module 3 - Suspension & Pneumatic Systems	**Unit 3: Let's Get Moving** Elective Module 6 – Motion, Renewable Energies & Solar Vehicle Design	**Unit 4: WICKED Futures** Elective Module 10 - Intro to WYCKD Problems & Major Task
Outcomes	5.1.1, 5.2.1, 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, 5.6.1, 5.6.2, 5.7.1,5.8.1	5.7.1
iSTEM Modules	C-1.1, C-2.1, C-3.2	C-1.1, C-1.2, C-2.1, C-2.2, C-2.3, E-6.1, E-6.2, E-6.3, E-6.4, E-6.5, (Optional) E-8.1, E-8.2, E8.3, E8.4, E8.5)	E-10.1, E-10.2, E-10.3, E-10.4, E-10.5 *Student chosen projects could contain a number of elective focuses and outcomes; students could choose a new concept or extend an existing concept to address a WICKED problem
Assessment			**Assignment** – EV bike testing

Term 4	**Weeks 1 - 10**	**Weeks 1 - 10**	**Weeks 1 - 10**
Unit	**Unit 4: WICKED Futures** Elective Module 10 - Major Design Task	**Unit 4: WICKED Futures** STEM Career Investigation	**Unit 4: WICKED Futures** Elective Module 11 - Drone Pilot Foundations
Outcomes	5.1.1, 5.1.2, 5.2.2, 5.3.1, 5.3.2, 5.4.1, 5.5.1, 5.6.1, 5.6.2, 5.7.1	5.5.1, 5.7.1	5.2.2, 5.3.2, 5.4.2, 5.5.1, 6.6.2, 5.7.1, 5.8.1
iSTEM Modules	C-1.1, C-1.2, C-2.1, C-2.2, C-2.3, E-10.1, E-10.2, E-10.3, E-10.4, E-10.5		C-1.1, C-1.2, C-2.1, C-2.2, C-2.3, E-11.1, E-11.2, E-11.3, E-11.4, E-11.5
Assessment	**Assignment –** Major design presentation (Shark tank pitch)		