

# Year 9

## Elective Offerings

### 2021



The Year 9 elective subjects at Pacific Lutheran College offer opportunity for students to play an active role in developing the next phase of their learning journey. Students continue to study a CORE set of subjects and in addition to this, will have the chance to select **THREE** elective subjects for each semester. These elective offerings build from the Year 6-8 experience subjects and allow students to delve more deeply into a range of subjects whilst keeping their options open for future subject selections.

## **What happens with Year 9 subjects in 2021?**

In 2021, Year 9 students will continue to undertake CORE classes. They will be able to make a choice to select the Mathematics option that suits them best. They will also have the opportunity to select THREE, semester long elective subjects for Semester 1 and THREE semester long elective subjects for Semester 2. Each elective subject will be undertaken for THREE lessons per week for the semester. Some electives require students to take the Semester 1 course before undertaking the Semester 2 offering. These electives have been highlighted with an asterisk.

## ***When will students select these subjects?***

Students will select elective subjects by Wednesday 12<sup>th</sup> August 2020 (Week 5 of Term 3). They will need to make selections for both Semester 1 and Semester 2 at this time. Students and families will be emailed instructions on how to lodge their choices following the information evenings.

## ***Will students be able to change subjects during a course?***

Students will be able to apply to change subjects in the first two weeks of the course commencing and in the final two weeks of the course, prior to the following semester. Subject changes will be dependent on availability and will be negotiated with the Head of Learning Middle College.

## ***What will the 2021 CORE subjects be?***

CHRISTIAN STUDIES	MATHEMATICS	SCIENCE
ENGLISH	MATHEMATICS AND EXTENSION	SOSE
HPE	RITE JOURNEY	

## ***What is the difference between Mathematics and Mathematics and Extension?***

### **Mathematics**

Students who undertake Mathematics will be engaged with the Australian Curriculum and have the opportunity to consolidate the key concepts. This course will be most suitable for students who are most likely to undertake General Mathematics or Essential Mathematics in their senior course of study. More information about the senior courses can be accessed at: <https://www.qcaa.qld.edu.au/senior/subjects/mathematics>.

### **Mathematics and Extension**

Students who undertake Mathematics and Extension will be engaged with the Australian Curriculum and have the opportunity to extend on key concepts and explore additional, related content. This course would be essential for students who will undertake Mathematics Methods or Specialist Mathematics in their senior course of study. More information about the senior courses can be accessed at: <https://www.qcaa.qld.edu.au/senior/subjects/mathematics>.

*Students and families who are unsure of which option would be the best fit for them should approach their class teacher initially or consult with the Head of Middle College Mathematics.*

**What will the 2021 elective subjects be?**

The SEMESTER 1 elective offerings are:

Line One	Line Two	Line Three
ART: Art Beat	Drama   Centre Stage	Design
Dance   Turn Out	Japanese (1)	Food and Wellbeing   Food in the Fast Lane
Business Economics	Literature   Not the Same Old Story!	Information Technology   Photoshop and Python
STEM Engineering (STEM 1)	Manufacturing Studies	Music
Information Technology   Photoshop and Python	Philosophy and Reasoning	Media Studies

The SEMESTER 2 elective offerings are:

Line One	Line Two	Line Three
ART: Art Beat	ART: Abstract Comics	Design
Business Economics	Drama   Centre Stage	Food and Wellbeing   Food in the Fast Lane
Dance   Turn Out	Japanese (1)	Japanese (2)
History	Literature   Strange Things Indeed!	Media Studies
Information Technology   Computer Studies and Blender	Manufacturing Studies	STEM Engineering (STEM 2) *
STEM Engineering (STEM 1)	Philosophy and Reasoning	

**Are there any prerequisites for Year 10 courses?**

Japanese is the only subject at this year level that is a prerequisite for the Year 10 course.

**Are there any prerequisites for the Year 9 offerings?**

*It is strongly recommended that:*

Students enrolling in STEM 2 in Semester 2 should have undertaken STEM 1 in Semester 1.

Students enrolling in Japanese 2 in Semester 2 should have undertaken Japanese 1 in Semester 1.

**Please note: subject offerings may change in response to a range of circumstances.**

**Semester 1**

**Learning Area: Art****Subject Title:** Art Beat: Understanding 21st Century Art**Subject Outline:**

This course is inspired by developments happening in the art world right now such as street art and digital art. Students will explore these movements and experiment with the conventions, subject matter and themes in their own creative works. Students will draw, stencil and paint their way to new understandings of themselves and society. Students should bring ideas and their devices to assist with research and to generate work.

*It is highly recommended that students intending to study Art in Year 10 enrol in Art 1 or 2 or both in Year 9.*

\*\*\*\*\*

**Learning Area: Business Economics****Subject Title:** Business and Economics**Subject Outline:**

Business and Economics (BAE) will look at regional and global issues with opportunities to understand the role of the Australian economy. Students will participate in activities to develop economic and business reasoning through connections related to everyday issues and events as well as more complex contemporary issues such as hunger and homelessness. Students may look at designing and building a garden stall that will encapsulate sustainable practices for market gardens as an artefact and vehicle for their learning.

\*\*\*\*\*

**Learning Area: Dance****Subject Title:** Turn Out**Subject Outline:**

In Turn Out, students will explore three dimensions of dance: Choreography, Performance and Appreciation. Drawing on dances from a range of cultures, times and locations students will use the elements of dance, choreographic devices, form and production elements to communicate choreographic intent through dances they create, perform and review. Students will refine technical skills in genre and style specific techniques and explore meaning and interpretation, forms and elements, and social, cultural and historical contexts of dance as they make and respond to dance. Students will understand that safe dance practices underlie all experiences in the study of dance and perform within their own body capabilities and work safely in groups.

\*\*\*\*\*

**Learning Area: Design Technology****Subject Title:** Design**Subject Outline:**

In Year 9 Design, students use design thinking, graphics processes and production skills to generate designed solutions. The design process is iterative and students will be expected to methodically prototype, test, analyse and refine their ideas. In the first term of the semester, students investigate aeronautical principles and theories of flight. They make and test a balsa plane to collect data which will inform modifications to their design. Throughout the second term of the semester, students will investigate the concepts, terminology and processes involved in architectural and interior design by designing a shipping container 'pop up kitchen'. Students will learn the design process, develop sketches and a make a physical or 3D model of their design using CAD software.

The focus of this course is to give students an opportunity to explore a variety of technologies both in the graphics space and workshop.

\*\*\*\*\*

**Learning Area: Drama****Subject Title:** Centre Stage**Subject Outline:**

In Year 9 Drama, students will improvise with the elements of drama and narrative structure to develop ideas and explore subtext to shape devised and scripted drama.

They will manipulate combinations of the elements of drama to develop and convey the physical and psychological aspects of roles and characters consistent within dramatic forms and performance styles.

Students will practice and refine the expressive capacity of voice and movement to communicate ideas and dramatic action in a range of forms, styles and performance spaces, as well as structure drama to engage an audience through manipulation of dramatic action. They will perform devised and scripted drama making deliberate artistic choices and shaping design elements to create dramatic meaning for an audience.

As an integral part of the course, students will also evaluate how the elements of drama, forms and performance styles in devised and scripted drama convey meaning and aesthetic effect. Students will also be exposed to live theatre.

\*\*\*\*\*

**Learning Area: Food and Wellbeing****Subject Title:** Food in the Fast Lane**Subject Outline:**

This course encourages students to enjoy the satisfaction of home cooking with minimum time and fuss without compromising on nutrition and taste. It will provide students with the skills to design and prepare healthy food solutions and explore simple food presentation techniques. Students will be encouraged to think creatively as they work cooperatively,

safely and efficiently. These skills will have a positive impact on the students' quality of life and will allow them to cope in a fast, changing and demanding society.

Throughout the semester, students will be expected to develop their food knowledge, skill base and independence in the kitchen. Specifically, the course focuses on home-made versus commercially prepared foods in regards to cost, nutritional value, time, taste and appearance, analysing personal food intake, interpreting food labelling, advertising of fast foods, preparing a range of fast foods and nutrition. The Year 9 course is a hands-on practical course that promotes the development of independence, encourages working cooperatively in small or large groups and allows students to develop confidence within the kitchen environment. Students interested in nutrition, food product development and manufacturing, food service and catering will benefit from this course.

\*\*\*\*\*

### **Learning Area: Information Technology**

**Subject Title:** Photoshop and Python

**Subject Outline:**

An introductory unit has been designed to develop the student's skills in using image manipulation software such as Adobe Photoshop. Students will learn about masking, layering, lighting flares, blurring and compiling images in the development of a folio of pieces.

Students will work with Python in Year 9 as an introduction to procedural programming. Basic programming constructs such as sequencing, iteration, selection and the use of variables will be covered in a variety of learning situations. This knowledge will be used to program a microprocessor, the MicroBit as well as creating small Python games.

Activities such as developing a remote control for the buggy with on board radio channels, creating a game involving the MicroBit to improve health to test on Year 6 students will be part of the assessment aspects of this area.

\*\*\*\*\*

### **Learning Area: Japanese**

**Subject Title:** Japanese (1)

**Subject Outline:**

Japanese (1) is the pre-requisite subject for students wishing to study Japanese in Semester 2 (Japanese 2) and Year 10. Students will consolidate their understanding of the Japanese script with a focus on katakana and kanji. A wider range of verbs and adjectives will be studied to allow students to construct more detailed and complex sentences to explore their personal world.

By the end of this course, students should be confident with their hiragana, katakana, kanji, verbs and adjectives and be capable of applying a range of vocabulary and sentence structures to communicate about authentic topics across the skills of listening, reading speaking and writing.

*Please note: This is a prerequisite subject for Year 10 Japanese*

\*\*\*\*\*

## **Learning Area: Literature**

**Subject Title:** Literature Not the Same Old Story!

### **Subject Outline:**

Studying Literature offers learners an opportunity to examine a range of creative genres and texts, as well as, work both independently and collaboratively to develop a deeper understanding of how these texts are constructed. Students will engage in the writing process to develop unique responses to a variety of prompts, in a range of styles. This subject aims to build on the skills acquired in regular English classes and enrich students learning and understanding.

The elective '*Not the Same Old Story!*' enables students to delve deep into the realm of creative writing and is perfect for those who are interested in alternate forms of storytelling. More specifically, students will learn how to build tension, manipulate mood, plot and setting, create authentic characters, foreshadow events, exploit empathy and use common human experiences to engage readers.

\*\*\*\*\*

## **Learning Area: Manufacturing Studies**

**Subject Title:** Manufacturing Studies

### **Subject Outline:**

In Manufacturing Studies, students use a range of different materials to work through the manufacturing process of interpreting technical drawings, project planning, construction and evaluating their products. Students are introduced to a selection of tools and equipment that enhance the development of fine motor skills and learn to follow production processes to achieve desired outcomes. Students develop an understanding of properties of materials and how this affects appropriate selection of tools and workshop processes. They also use CAD software to enable them to plan and carry out a task using CNC routing technology.

There is a focus on the safety issues associated with using tools and equipment and working collaboratively in a workshop environment. Students learn about the implications of using certain materials for particular purposes and the environmental impact of using them. While not a prerequisite for the senior courses in this learning area, Year 9 Manufacturing Studies does prepare students well for the subjects.

\*\*\*\*\*

## **Learning Area: Media Studies**

**Subject Title:** Film Art: An Introduction

### **Subject Outline:**

This subject equips students for a future of unimagined possibilities with highly transferable skills and the capacity for flexible thinking and doing. Students will learn to create, design, represent, communicate, investigate and share their imagined and conceptual stories and ideas through the moving image.



Concepts of film and television representations and technologies will be a key focus. Students will develop an understanding of the technical skills required to make and respond to film and television and how representations work in popular culture content. They will learn about how film, television and new media technical and symbolic codes can be manipulated in preproduction formats and in post-production to purposefully construct representations of people, places, events, ideas and emotions within a specific film genre.

Students will create a film sequence by making treatments, storyboards and scripts which follow traditional preproduction, production and post-production conventions. They will investigate the stylistic approaches of popular directors and analyse the generic conventions in mainstream film genres.

\*\*\*\*\*

### **Learning Area: Music**

**Subject Title:** Music

**Subject Outline:**

Year 9 Music is a preparatory subject for students wishing to continue Music in Year 10. Whilst there is an emphasis on performance, students will also compose using specialised music software and begin to develop the skills to analyse music.

By the end of the course, students should be confident in performing for an audience. At this stage, students will not be required to specialise in a particular instrument, but the ability to play will be an advantage. They should also have a broader knowledge of a range of musical styles, eras and characteristics of different genres.

*It would be highly beneficial for students intending to undertake music in Year 10 to have undertaken music or to have played a musical instrument.*

\*\*\*\*\*

### **Learning Area: Philosophy and Reasoning**

**Subject Title:** Philosophy and Reasoning

**Subject Outline:**

Philosophy involves questioning our assumptions, beliefs and reasons for holding particular views. During the study of Philosophy, students will be encouraged to become independent thinkers who reflect on philosophical issues in the light of their own experiences.

The course aims are met by engaging students in a community of inquiry. Students will participate in discussions and debate within which the following philosophical issues will be critically analysed:

- Logic – the study of reasoning;
- Metaphysics – the critical examination of reality;
- Epistemology – the investigation of what we know and the origins of knowledge;
- Ethics – the study of morals and judgement; and
- Aesthetics – the study of the nature of beauty.

Students will learn how to think their way through problems, harness their curiosity and develop clarity of thought. They will undertake a text-based analysis and will be required to present ideas, evidence and reasons in an orderly way.

\*\*\*\*\*

**Learning Area: STEM (1) Engineering**

**Subject Title:** STEM (1) Engineering

**Subject Outline:**

In STEM 1 Engineering (**S**cience, **T**echnology, **E**ngineering, **M**athematics), otherwise known as **S**tudents **T**hinking, **E**xploring, **M**aking, students will explore global opportunities for innovation, inquiry, collaboration and creative problem-solving. Students will exercise these skills through independently exploring a solution to either a research question proposed for them, or by developing their own question in an area of passionate, personal interest. Students will work in groups to build an underwater ROV that they will test in water tanks and develop their response to their research question. The build process will involve students learning how to solder, test circuits and apply theory into practical situations. It is recommended that students wishing to study STEM (1) have at least a B grade in Science and Mathematics.

*STEM 1 is a prerequisite for Semester 2 STEM 2.*

# Semester 2

**Learning Area: Art (1)****Subject Title:** Art Beat: Understanding 21st Century Art**Subject Outline:**

This course is inspired by developments happening in the art world right now such as street art and digital art. Students will explore these movements and experiment with the conventions, subject matter and themes in their own creative works. Students will draw, stencil and paint their way to new understandings of themselves and society. Students should bring ideas and their devices to assist with research and to generate work.

*It is highly recommended that students intending to study Art in Year 10 enrol in Art 1 or 2 or both in Year 9.*

\*\*\*\*\*

**Learning Area: Art (2)****Subject Title:** Abstract Comics**Subject Outline:**

Students explore the conventions, subject matter, themes and principles of abstract art through the lens of the abstract comic. Students will compose abstract sequential art to demonstrate their understanding of abstract comic techniques. Students will draw, engage in printmaking and paint their way to new understandings of themselves and society. Students should bring ideas and their devices to assist with research and to generate work.

*Students intending to study Art in Year 10 are encouraged to enrol in either Art 1 or Art 2 or both in Year 9.*

\*\*\*\*\*

**Learning Area: Business****Subject Title:** Business and Economics**Subject Outline:**

Business and Economics (BAE) will look at regional and global issues with opportunities to understand the role of the Australian economy. Students will participate in activities to develop economic and business reasoning through connections related to everyday issues and events as well as more complex contemporary issues such as hunger and homelessness. Students may look at designing and building a garden stall that will encapsulate sustainable practices for market gardens as an artefact and vehicle for their learning.

\*\*\*\*\*

**Learning Area: Dance****Subject Title:** Turn Out**Subject Outline:**

In Turn Out, students will explore three dimensions of dance: Choreography, Performance and Appreciation. Drawing on dances from a range of cultures, times and locations students will use the elements of dance, choreographic devices, form and production elements to communicate choreographic intent through dances they create, perform and review. Students will refine technical skills in genre and style specific techniques and explore meaning and interpretation, forms and elements, and social, cultural and historical contexts of dance as they make and respond to dance. Students will understand that safe dance practices underlie all experiences in the study of dance and perform within their own body capabilities and work safely in groups.

\*\*\*\*\*

**Learning Area: Design Technology****Subject Title:** Design**Subject Outline:**

In Year 9 Design, students use design thinking, graphics processes and production skills to generate designed solutions. The design process is iterative, and students will be expected to prototype, test, analyse and refine their ideas methodically. In the first term of the semester, students are taught technologies of laser cutting and 3D printing to produce a working geared model. Throughout the second term of the semester, students will investigate aeronautical principles and theories of flight. Students will make and test a balsa plane to collect data which will inform modifications to their design. The focus of this course is to give students an opportunity to explore a variety of technologies both in the graphics space and workshop.

\*\*\*\*\*

**Learning Area: Drama****Subject Title:** Centre Stage**Subject Outline:**

In Year 9 Drama, students will improvise with the elements of drama and narrative structure to develop ideas and explore subtext to shape devised and scripted drama.

They will manipulate combinations of the elements of drama to develop and convey the physical and psychological aspects of roles and characters consistent within dramatic forms and performance styles.

Students will practice and refine the expressive capacity of voice and movement to communicate ideas and dramatic action in a range of forms, styles and performance spaces, as well as structure drama to engage an audience through manipulation of dramatic action. They will perform devised and scripted drama making deliberate artistic choices and shaping design elements to create dramatic meaning for an audience.

As an integral part of the course, students will also evaluate how the elements of drama, forms and performance styles in devised and scripted drama convey meaning and aesthetic effect. Students will also be exposed to live theatre.

\*\*\*\*\*

**Learning Area: History**

**Subject Title:** Pictures of Power

**Subject Outline:**

Ever wondered about what lessons can be learned from those that went before us? About what has stopped people from existing peacefully together?

Pictures of Power is a course that will explore these big historical questions through the case study of Cambodia's history.

Students will first examine Cambodia's Khmer Empire (803 – 1431CE), the superpower of the Asian region. They will interrogate sources to determine what life was like, how it operated and how the kingdom used its power to become the largest preindustrial metropolis in the world. Students will also examine contemporary Cambodia by exploring the power of the Khmer Rouge under the leadership of Pol Pot (1975-1979). During this regime, the state controlled the people, collectivised agriculture, forcibly enlisted children into the military and engaged in one of modern history's most notorious genocide campaigns. Students will challenge themselves to determine the factors that prevented the people of Cambodia under the Khmer Rouge from being able to exist safely in their own environment.

\*\*\*\*\*

**Learning Area: Food and Wellbeing**

**Subject Title:** Food in the Fast Lane

**Subject Outline:**

This course encourages students to enjoy the satisfaction of home cooking with minimum time and fuss without compromising on nutrition and taste. It will provide students with the skills to design and prepare healthy food solutions and explore simple food presentation techniques. Students will be encouraged to think creatively as they work cooperatively, safely and efficiently. These skills will have a positive impact on the students' quality of life and will allow them to cope in a fast, changing and demanding society.

Throughout the semester, students will be expected to develop their food knowledge, skill base and independence in the kitchen. Specifically, the course focuses on home-made versus commercially prepared foods in regards to cost, nutritional value, time, taste and appearance, analysing personal food intake, interpreting food labelling, advertising of fast foods, preparing a range of fast foods and nutrition. The Year 9 course is a hands-on practical course that promotes the development of independence, encourages working cooperatively in small or large groups and allows students to develop confidence within the kitchen environment. Students interested in nutrition, food product development and manufacturing, food service and catering will benefit from this course.

\*\*\*\*\*

**Learning Area: Information Technology (2)****Subject Title:** Computer Studies and Blender**Subject Outline:**

The course encourages and develops independent problem solving in the area of Information Technology. Students will learn skills in 3D modelling using Blender. The models developed will form a folio of student work. Models created in Blender can be saved as .stl files for 3D printing, as 3D objects for use in 3D games or as well-developed animations for websites.

Students will learn about computer components through taking apart, cleaning and rebuilding a desktop machine. Investigating components such as RAM, processors, graphic and sound cards, optical drives and fans, students will be more informed in the area of not only purchasing a computer to match their needs and those of others, but also build a computer themselves.

Web site development will complete the semester where students will create a website using HTML and CSS to provide users with an informative website to assist parents in selecting a computer for their needs.

\*\*\*\*\*

**Learning Area: Japanese****Subject Title:** Japanese (1)**Subject Outline:**

Japanese (1) is the pre-requisite subject for students wishing to study Japanese in Semester 2 (Japanese 2) and Year 10. Students will consolidate their understanding of the Japanese script with a focus on katakana and kanji. A wider range of verbs and adjectives will be studied to allow students to construct more detailed and complex sentences to explore their personal world.

By the end of this course, students should be confident with their hiragana, katakana, kanji, verbs and adjectives and be capable of applying a range of vocabulary and sentence structures to communicate about authentic topics across the skills of listening, reading, speaking and writing.

*Please note: This is a prerequisite subject for Year 10 Japanese.*

\*\*\*\*\*

**Learning Area: Japanese****Subject Title:** Japanese (2)**Subject Outline:**

Japanese (2) is an enrichment subject to prepare students for Year 10 Japanese. It is a conversation-based subject where students will focus primarily on their listening and speaking skills although students will still be required to read and write in Japanese. The course will involve authentic role-plays, immersion of the target language and the development of strong social understandings for students to function in a culturally appropriate manner in Japan.

While Japanese (2) is not a pre-requisite subject for Year 10 Japanese, it is strongly recommended that students undertake this subject if they are interested in applying for the Inbound and Outbound Japanese Exchange Programs in Year 10, where conversation is an integral aspect of interaction.

*Please note: students should have taken Japanese (1) before taking this subject.*

\*\*\*\*\*

## **Learning Area Literature**

**Subject Title:** Literature – Strange Things Indeed!

### **Subject Outline:**

Studying Literature offers learners an opportunity to examine a range of creative genres and texts, as well as, work both independently and collaboratively to develop a deeper understanding of how these texts are constructed. Students will engage in the writing process to develop unique responses to a variety of prompts, in a range of styles. This subject aims to build on the skills acquired in regular English classes and enrich students learning and understanding.

In the elective 'Strange Things Indeed!', students explore the stranger side of fiction and is suited to those who are looking to investigate the alternate worlds and creatures we see in gothic literature and dystopian novels. More specifically, students will learn how to build tension, manipulate mood and setting, foreshadow events, mimic specific genre features, deconstruct key themes and analyse the portrayal of the human condition.

\*\*\*\*\*

## **Learning Area: Manufacturing Studies**

**Subject Title:** Manufacturing Studies

### **Subject Outline:**

In Manufacturing Studies, students use a range of materials to work through the manufacturing process of interpreting technical drawings, project planning, construction and evaluating their products. Students are introduced to a selection of tools and equipment that enhance the development of fine motor skills and learn to follow production processes to achieve desired outcomes. Students develop an understanding of properties of materials and how this affects appropriate selection of tools and workshop processes. They also use CAD software to enable them to plan and carry out a task using CNC routing technology.

There is a focus on the safety issues associated with using tools and equipment and working collaboratively in a workshop environment. Students learn about the implications of using certain materials for particular purposes and the environmental impact of using them. While not a prerequisite for the senior courses in this learning area, Year 9 Manufacturing Studies does prepare students well for the subjects.

\*\*\*\*\*



**Learning Area: Music****Subject Title:** Music**Subject Outline:**

Year 9 Music is a preparatory subject for students wishing to continue Music in Year 10. Whilst there is an emphasis on performance, students will also compose using specialised music software and begin to develop the skills to analyse music.

By the end of the course, students should be confident in performing for an audience. At this stage, students will not be required to specialise in a particular instrument, but the ability to play will be an advantage. They should also have a broader knowledge of a range of musical styles, eras and characteristics of different genres.

\*\*\*\*\*

**Learning Area: Philosophy and Reasoning****Subject Title:** Philosophy and Reasoning**Subject Outline:**

Philosophy involves questioning our assumptions, beliefs and reasons for holding particular views. During the study of Philosophy, students will be encouraged to become independent thinkers who reflect on philosophical issues in the light of their own experiences.

The course aims are met by engaging students in a community of inquiry. Students will participate in discussions and debate within which the following philosophical issues will be critically analysed:

- Logic – the study of reasoning;
- Metaphysics – the critical examination of reality;
- Epistemology – the investigation of what we know and the origins of knowledge;
- Ethics – the study of morals and judgement; and
- Aesthetics – the study of the nature of beauty.

Students will learn how to think their way through problems, harness their curiosity and develop clarity of thought. They will undertake a text-based analysis and will be required to present ideas, evidence and reasons in an orderly way.

\*\*\*\*\*

**Learning Area: STEM (1) Engineering****Subject Title:** STEM (1) Engineering**Subject Outline:**

In STEM 1 Engineering (**S**cience, **T**echnology, **E**ngineering, **M**athematics), otherwise known as **S**tudents **T**hinking, **E**xploring, **M**aking, students will explore global opportunities for innovation, inquiry, collaboration and creative problem-solving. Students will exercise these skills through independently exploring a solution to either a research question proposed for them, or by developing their own question in an area of passionate, personal interest. Students will work in groups to build an underwater ROV that they will test in water tanks and develop their response to their research question. The build process will involve students learning how to solder, test circuits and apply theory into practical situations. It is recommended that students wishing to study STEM (1) have at least a B in Science and Maths.

\*\*\*\*\*

**Learning Area: STEM (2) Engineering**

**Subject Title:** STEM (2) Engineering

**Subject Outline:**

In STEM (2) Engineering students will continue to wonder, probe, discover and create. They will have two course options in this subject. Students can choose to take their Semester 1 project to a new dimension by identifying where modifications, alterations, further calculations and additional construction can result in a new creation. This new design would evolve to be even more technologically complex than the original design from Semester 1.

The second alternative for the STEM (2) student, is to design their own underwater ROV. This is an opportunity for their passion to be articulated in the form of a project that they have a passion for and they will research, inquire and discover more about. It would be a requirement, that at least two of the four STEM (Science, Technology, Engineering, Mathematics) areas are clearly embedded within the project and that it is granted teacher approval. Once again, in order to showcase the work, students will present their final product at the STEM Showcase Evening.

*Infinite Possibilities is Knowing "If we can Think it, then It Exists". Vincent J. Daczynski*

\*\*\*\*\*