

**Year 10 ENGLISH – Core Subject**

The Year 10 English course has an enhanced focus on text analysis and developing students’ ability to write and speak confidently for a range of purposes.

Students will broaden their appreciation of literature by examining novels, poetry and plays, and encounter a range of genres, both classical and contemporary. Students will study a Shakespearean play or contemporary drama and will also undertake a comparative study, developing their ability to articulate connections between different texts.

There will be an emphasis on strengthening students’ critical writing skills, including their ability to effectively structure their work and compose complex responses to texts. Students will complete spoken and multimodal presentations, focusing on their ability to engage or persuade an audience. Students will be encouraged to write creatively for a range of contexts and use software to publish their work. The end of year examination will help students to develop study and time management skills relevant to their studies in Years 11 and 12.

There is an Extension English class in Year 10 that will undertake additional units of study and broaden students’ appreciation of literary criticism and comparative analysis. The smaller English Foundation class in Year 10 will focus on providing more individual attention and improving basic literacy skills.

**Year 10 MATHEMATICS – Core Subject**

At Year 10, students can choose one of three Year 10 options in Mathematics; Mathematics 10/10A, Mathematics General or Mathematics Essential. Students who have completed the Year 10/10A in an accelerated program may choose a Stage 1 Mathematics course (two Semesters).

**Year 10 MATHEMATICS (10/10A)**

Mathematics 10/10A prepares students for the demands of any Mathematics subject at SACE Stage 1 level.

This course continues to build on the concepts and methods taught in Year 9. Students will work with linear and quadratic functions, simple and compound interest, statistical relationships, measurement and trigonometry. Students’ skills in the appropriate use of graphics calculators and computer applications continue to be developed. The importance of presenting, rationalizing and applying mathematical knowledge is a focus of the program.

End of semester exams are held at the end of Terms 2 and 4.
Year 10 MATHEMATICS GENERAL

The second option for studies in Mathematics at Year 10 is the Mathematics General course.

This program prepares students for Year 11 Mathematics General – a two Semester course at SACE Stage 1. Topics include financial mathematics, measurement, linear equations and graphs, trigonometry and statistics. The use of spreadsheets, geometry software and scientific and graphic calculators is extensive.

All of the Year 10 courses include the assessment tasks of summative and formative tests, investigations, projects and assignments. Students of each course will sit an examination paper at the end of both Semesters 1 and 2.

Year 10 MATHEMATICS ESSENTIAL

The third option at Year 10 is Year 10 Essential Mathematics.

This course prepares students for Year 11 Essential Mathematics provided that success is achieved at the A or B level in Year 10. Topics will include calculations, some without calculators, simple straight line graphs, ratios, financial mathematics and some measurement.

All of the Year 10 courses include the assessment tasks of summative and formative tests, investigations, projects and assignments. Students of each course will sit an examination paper at the end of both Semesters 1 and 2.

Year 10 SCIENCE – Core Subject

The course addresses the requirements of the Australian Curriculum at the Year 7 to 10 levels.

Students build understanding in biological sciences, chemical sciences, physical sciences, earth and space sciences. The Science as Human Endeavour strand of the curriculum allows students to explore the nature and development of Science and the use and influence of Science. Science inquiry skills are developed in questioning and predicting, planning and conducting, processing and analyzing data and information, evaluating and communicating.

This course is designed to consolidate and extend the skills developed in previous years.

Specific Year 10 topics studied include —

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<th>Inheritance and Genetics</th>
<th>Motion and Road Science</th>
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<td>Space Science</td>
<td>Investigating Chemical Reactions</td>
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<td>Evolution</td>
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<td>Earth Systems</td>
<td>Electrochemistry</td>
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<td>The Periodic Table</td>
<td>Future</td>
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<td>Exploring the Universe</td>
<td>Explaining Chemical Reactions</td>
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Students in Year 10 are provided with the option of studying their Chemistry and Physics topics at ‘core’ or ‘extended’ level. The ‘extended’ level option allows students who are intending to study SACE Stage 1 Chemistry and/or Physics the opportunity to treat the Year 10 topics at a greater depth to provide a more rigorous preparation for Year 11.

Further to the requirements of the Australian Curriculum all Year 7, 8 and 9 students will undertake a Science Project. This project is internally assessed but students can also choose to enter their project in the 2018 SASTA Oliphant Science Awards competition. All students in Years 7 -10 will have the opportunity to undertake the one hour length ICAS assessment in Science. Individual feedback will be provided on their achievement in this assessment.

Assessment instruments which may be used include theory tests, projects and assignments, bookwork, worksheets, homework, practical tests and excursion work sheets. The theory tests, comprise about 50% of the overall assessment, and include knowledge of material covered in the course and also assessment of the student’s ability to apply that knowledge and solve problems.

**Year 10 HISTORY – Core Subject - One Semester**

**The Australian Curriculum**

**TITLE: The Modern World and Australia: 1918 to the present**

**Overview**

The Overview content identifies important features of the period (1918 to the present) as part of an expansive chronology that helps students understand broad patterns of historical change. The overview provides the broader context for the teaching of depth study content and will be built into various parts of a teaching and learning program. The overview content will be used to give students an introduction to the historical period; to make the links to and between the depth studies, and to consolidate understanding through a review of the period.

Overview content for the Modern World and Australia includes the following:

1. The inter-war years between World War I and World War II, including the Treaty of Versailles, the Roaring Twenties and the Great Depression
2. Continuing efforts post-World War II to achieve lasting peace and security in the world, including Australia’s involvement in UN peacekeeping
3. the major movements for rights and freedom in the world and the achievement of independence by former colonies
4. the nature of the Cold War and Australia’s involvement in Cold War and post-Cold War conflicts (Korea, Vietnam, The Gulf Wars, Afghanistan), including the rising influence of Asian nations since the end of the Cold War
5. developments in technology, public health, longevity and standard of living during the twentieth century, and concern for the environment and sustainability

**Depth Studies**

1. The Second World War
2. Rights and Freedoms 1945 to the present
3. The Globalising World: Popular Culture 1960s to the present
   OR The Environment movement
   OR Migration Experiences
**Year 10 Stage 1 PERSONAL LEARNING PLAN - Core Subject – 1 Semester**

(20 Credits)

The Stage 1 Personal Learning Plan (PLP) is a 10-credit subject designed to help students to make informed decisions about their personal development, education, and training. The program of learning provides students with time to work with their teachers and other experts to develop knowledge and skills in planning for their SACE and their future beyond school.

Students explore the world of work, their place in it and the skills that are required to be successful. They will look at the requirements of the workplace and both employer and employee responsibilities to maintain a safe working environment. They will explore career options.

Students will secure, prepare for, undertake and evaluate a one week Work Experience placement.

Students will undertake a unit in financial literacy and carry out simulation activities and run an enterprise in order to develop the enterprise skills that will equip them to become lifelong learners and to contribute productively to Australian society. Students will have the opportunity to develop skills such as identifying opportunities, planning, teamwork, communication and evaluation through carrying out their enterprises.

The Personal Learning Plan is a compulsory requirement of the SACE. Students must complete 10 credits of the Stage 1 Personal Learning Plan with a C grade or better to gain their SACE.

The PLP is designed to develop students’ capabilities. Students learn how to develop, implement, review, and adjust personal learning goals and choices to prepare for their education and their future career and life pathways.

Four assessment tasks are undertaken, involving a number of formats, the final being a presentation by each student to a small panel.

**Year 10 PHYSICAL EDUCATION - Core Subject – 1 Semester**

Students will further develop their skills and knowledge of physical activity by choosing from a range of individual, partner and team sports and recreational activities. They will choose from weight training, archery, tennis, cricket, softball, basketball, volleyball, badminton and soccer. Students will be assessed in practical aspects of the course. They will be assessed through a combination of performance checklists, teacher observation, peer assessment and personal management skills.

**Year 10 PURPOSELY WELL - Core Subject**

A new subject in 2018, all students will participate in Purposely Well. It is a combination of Health and Personal Development and Religious and Values Education. The program has been established to build on the learning experienced in the Rite Journey and to further assist the transition to Senior School and young adulthood. A dynamic and contemporary program, enhancing wellbeing will be a critical component of this course and a key feature of each topic. Students will engage in units focused on facing challenges with a growth mindset, grit, resilience and perseverance. They will explore relevant topics on sexual health, drugs and alcohol, with a focus on safe practices, including safe party practices. They will also be challenged to grow themselves, by think about their purpose and how they can bring meaning to their lives in serving others; through community, social entrepreneurial and global initiatives.
ELECTIVE SUBJECTS

Year 10 INDONESIAN – Elective Subject

In 2018, this class will be a composite class of Year 9 and 10 students and will focus on language functions which will enable them to discuss topics including housing, shopping, ordering food at a restaurant, sports, weather and seasons, and traveling around a city. Students will look at role bargaining plays in Indonesian culture as well as investigating different ethnic groups in Indonesia. Language learning is accelerated with the use of free online applications and sites, taking advantage of social learning and interaction to help engage students in learning Indonesian.

Assessment includes written work in different genres such as surveys, comparative pieces and letters as well as aural comprehension, role-plays, and project-based learning. Students will also be coached towards a simple oral exam in preparation for SACE Indonesian.

Students will have the opportunity to use their language skills in authentic situations by conversing with students from our sister school in Kalimantan.

Language learning at St John’s Grammar provides an accelerated program for students as they progress to Stage 1.

Year 10 – Stage 1 JAPANESE - Elective Subject - Full Year (20 Credits)

Year 10 SACE Stage 1 Japanese course aims to extend written and spoken communication skills and allow students to take their learning to the next level. Sound knowledge of Hiragana and Katakana and Kanji studied at Year 9 are assumed.

Students will use a text book called Kokoseikatsu supplemented with ‘flipped classroom’ videos and posted work on the school’s Japanese Cavas page. There will be a focus on social learning with online educational tools used to support student’s personalized learning needs.

In this course, students will learn language to discuss ordering and buying food in restaurants and supermarkets, designing a travel itinerary, lifestyle while on exchange in Japan and writing in conversational style, as well as research certain aspects of traditional and modern Japan in an Investigative Tasks.

This can then be used authentically as students in Year 9, 10 and 11 have the opportunity to be part of the biannual trip to Japan in the even school years allowing them to experience another culture first hand. As in previous years, oral, listening and writing skills are emphasised. Now, authentic audiences are sourced with new technology allowing us to Skype our sister school students Japan while in class.

Assessment is planned to cater for a variety of learning styles and involves listening, oral and writing tasks and tests. Tasks include oral interviews and presentations, short essays, letters and stories. More complex written and oral tasks are designed to prepare students for SACE Stage 2 Japanese. Students start to develop a more independent approach to language acquisition, and are encouraged to build a personally relevant store of vocabulary to suit differing situations.

Year 10 DRAMA - Elective Subject – One or Two Semesters

Students will extend and refine performance skills through improvisation and polished work to a live audience. Students will view live professional theatre and develop the ability to analyse drama through discussion and writing. Students will discover the past and present context of drama through analysis and enactment. A willingness to work in groups, and to rehearse and perform outside of school hours is essential.
This course is designed to foster self-confidence, higher order thinking skills (analysis, evaluation, synthesis) and creative problem solving. Students will experience creating and making their first whole group production and experience the rewards of performing to the school community.

**Pre-requisites:** While it is not a prerequisite to have studied Drama in the Middle School it is certainly an advantage, as students cover a lot of ground work in regards to skill development. Students must be prepared to work in team situations, spend time rehearsing outside of school hours and be willing to perform to the school community.

**Semester 1: Exit Stage Left**

**The key areas studied are:**

- Theatre Performance Skills
- Technical skills for Theatre – Lighting & Sound (off-stage roles)
- Designers – Costumes, Set & Props (off-stage roles)
- Group Production Performance (on stage/public audience)

**Elements of study**

- Group Production
- Monologue
- Shakespeare / Soliloquy / Sonnets
- Improvisation
- Technical Theatre (Level 3)
- Review Writing - A Day at the Theatre with State Theatre Company.
  (Students will attend 2 professional productions each)

**Semester 2: Now for Something Completely Different**

**The key areas studied are:**

- Alternative Theatre
  - Anti-Theatre

- Physical Theatre
  - Technical skills for Theatre – Lighting & Sound (off-stage roles)
  - Designers – Costumes, Set & Props (off-stage roles)

**Elements of study:**

- Improvisation
- Stage Craft
- Performance Skills
- Theatre of Alienation (Bertolt Brecht)
- Theatre of Cruelty (Artaud)
- Surrealism
- Expressionism
- Review Writing - A Day at the Theatre with State Theatre Company.
  (Students will attend 2 professional productions each semester)
Year 10 BUSINESS, LAW AND GOVERNMENT— Elective Subject

Business, Law and Government is a subject designed to explore the economics and civics and citizenship strands of the Australian Curriculum.

This elective at Year 9 and 10, run as a combined subject, will be Semester-based and explore an introduction to Business and economics and the Australian legal and justice systems. Students will explore the foundations of the Australian Legal and Parliamentary system, and gain an insight into how effective the justice system is.

Furthermore, Students will learn about Australia’s position in the global market place, and the ways Australian Businesses are responding to change from a global perspective.

Assessment will consist of combinations of tests, reports, investigations and classroom simulations. Students will debate current issues in society and see how they relate to the Australian legal system.

Year 10 – TASTE THE WORLD – Elective Subject

Assumed knowledge - ‘Basic Cooking Techniques’ or ‘Simple Meals’.

In this subject, students examine the development of the Australian Cuisine and the influence of other cultures on our food choices. Content may cover Australian Bush Foods, influence of English settlement and the impact of other cultures eg: Indian, Italian, Thai, Japanese, Greek, on our diet. Opportunity will be available for students to investigate the food of another country. Practical tasks are selected to reinforce content and extend students’ food preparation skills.

The assessment for this course comprises a series of theory and practical tasks. Students will be assessed in line with the Australian Curriculum Achievement Standards for Design and Technology.

Year 10 – BAKED GOODIES – Elective Subject

Assumed knowledge - ‘Basic Cooking Techniques’ or ‘Simple Meals’.

Students will be introduced to the wonders of pastry (both sweet and savoury) in its various styles, cakes, biscuits, muffins and slices. An understanding of the variety of uses and cultural applications of different types of pastry will also be explored. The baking process will be explored as will the broad range of food product made using this process. Students will investigate the Australian Dietary Food Groups and nutritional recommendations for healthy eating in order to develop their own strategies for eating a healthy balanced diet. Practical skills will include designing and making healthy meals and snacks.

The assessment for this course comprises a series of theory and practical tasks. Students will be assessed in line with the Australian Curriculum Achievement Standards for Design and Technology.

Year 10 DIGITAL TECHNOLOGIES 2 – Elective Subject

Students develop skills and deep understanding in the design and creation of multimedia products including web pages, computer graphics, and animations. Participants are introduced to a variety of programming languages including Action Scripting, Visual Basic and Game Maker, producing a variety of applications for both desktop and mobile devices. Data Analytics and Computer Ethics are also explored, including data transfer, data security, and programmer responsibilities.

Students are required to enroll in this subject if they wish to study Stage 1 Digital Technologies.
Pre-requisite – It is strongly recommended that students complete 8 & 9 Digital Technologies prior to enrolling in this course. Students who would like to enroll in this course but have not completed 8 & 9 Digital Technologies should discuss this option with the Head of Department, Riccardo Rosadoni.

**Year 10 & 11 SACE Stage 1 – DIGITAL TECHNOLOGIES - One Semester (10 Credits)**

This course is designed as a foundation for Stage 2 Digital Technologies.

Students create practical, innovative solutions to problems of interest. By extracting, interpreting, and modelling real-world data sets, students identify trends to examine sustainable solutions. They investigate how potential solutions are influenced by current and projected social, economic, environmental, and ethical considerations, including relevance, originality, appropriateness, and sustainability.

Students use computational thinking skills and strategies to identify, deconstruct, and solve problems. They analyse and evaluate data, test hypotheses, make decisions based on evidence, and create solutions. Through the study of Digital Technologies, students are encouraged to take ownership of problems and design, code, validate, and evaluate their solutions. In doing so, they develop and extend their understanding of designing and programming, including basic constructs involved in coding, array processing, and modularisation.

Pre-requisite – Students must have successfully completed 9 & 10 Digital Technologies.

**Year 10 GEOGRAPHY – Elective Subject - One Semester**

There are two units of study in the Year 10 Geography curriculum: Environmental change and management and Geographies of human wellbeing.

**Environmental change and management** focuses on investigating environmental geography through an in-depth study of a specific environment.

The unit begins with an overview of the environmental functions that support all life, the major challenges to their sustainability, and the environmental worldviews - including those of Aboriginal and Torres Strait Islander Peoples - that influence how people perceive and respond to these challenges.

Students investigate a specific type of environment and environmental change in Australia and one other country. They apply human-environment systems thinking to understand the causes and consequences of the change and geographical concepts and methods to evaluate and select strategies to manage the change.

**Geographies of human wellbeing** focuses on investigating global, national and local differences in human wellbeing between places.

This unit examines the different concepts and measures of human wellbeing, and the causes of global differences in these measures between countries.

Students explore spatial differences in wellbeing within and between countries, and evaluate the differences from a variety of perspectives. They explore programs designed to reduce the gap between differences in wellbeing. These distinctive aspects of human wellbeing are investigated using studies drawn from Australia, India and across the world as appropriate.

Students will sit an end of semester exam.

**All Year 10 students will undertake a core study of the Australian History Curriculum** for one semester. It may be studied in Semester 1 or Semester 2.
Year 10 students who wish to study a full year of History can undertake an additional semester of World History as an elective.

Year 11 and 12 will continue as in previous years. Students can undertake one of two semesters of Stage 1 Modern History in Year 11 and a full year of Stage 2 Modern History in Year 12.

**Year 10 HISTORY – WORLD – Elective Subject – One Semester**

**TITLE: World History**

- The Vietnam War
- Persecution and Hope: Apartheid in South Africa
- China in Revolution 1911 -1949. Communist China under Mao Zedong

Students will develop skills in interpretation, analysis, empathy, research and communication to prepare them for Year 11 and/or Year 12 Modern History.

Assessment will be through a variety of means including coursework, essays, oral presentations, sources analysis tasks and an end of Semester examination.

**Year 10 MEDIA STUDIES – Elective Subject – One or Two Semesters**

The media are among the most powerful cultural influences in society today. The media inform, educate, entertain, and offer an interpretation of the world.

Through investigating issues involving the media and their effect on society, and exploring, on a practical level, aspects of the media industry, students will be better equipped to cope with social and technological change.

In this course, students will participate in examining and producing media materials. By working in a team to produce media materials, students will develop the skills of cooperation, collaboration, problem-solving, and communication.

Students will have the opportunity to plan, direct, record, and edit their work after studying the way in which media is used to communicate ideas and information in our society. Students will create a range of media products such as films, podcasts, billboards and other media forms.

**Year 10 MUSIC – Elective Subject**

Students can elect to do Year 10 Music for a semester or a full year. Students are encouraged to choose music for the full year. These students are expected to have had pre-musical training and theory knowledge, and at least 2 years of instrumental tuition on their chosen instruments. These students should have completed year 8-9 Music before choosing to continue in Senior School.

Students who aim to continue Music into Year 12 are highly encouraged to undertake this course. This course allows students to refine their theory skills and prepares these students for Solo Performance and Musicianship to a Year 12 standard. Students who enjoy music, but are not strong in theory can also succeed, as there is a focus on Music Industry, song writing and recording. This stream focuses on elements of the music industry and allows students the opportunity to learn about sound recording, musical performance and the technical aspects of the music industry.

For the practical component students are assigned to a small ensemble consisting of members from the class. Students are expected to research or arrange repertoire, rehearse, perform and evaluate their musical performance within these ensembles, with the aim that the ensemble is student directed.
Assessment

Assessments include theory and aural tests, arranging and composing assignments, a solo performance each term and group performances to the public.

Year 10 Music Pre-requisites:

- A minimum of 2 Years instrumental tuition prior to entering the Year 10 course.
- Students should be of AMEB grade 2 standard or equivalent or by negotiation with Cinzia Cursaro. (Head of Music)
- Continuation of private instrumental tuition throughout the Year.

Skills

Students develop and extend their musical literacy and understanding of the musical elements that underpin the creation of music through the exploration of musical works. They apply their understanding of musical elements in the creation of their own music.

Students develop an understanding of structural and stylistic features of music through exploring, analysing, and discussing works from diverse social and cultural contexts.

- activities that provide opportunities for personalised learning (e.g. investigating the stylistic elements of their own repertoire)
- aural perception practice
- reconstructing music through an aural source (playing by ear)
- relevant theory exercises
- sight-reading or sight-singing ensemble parts or simple solo pieces
- interpreting selected score excerpts
- identifying and notating rhythmic, melodic, and harmonic patterns
- transposing simple melodies
- transcribing a section of a work
- comparative studies of musical works
- engagement with external musical resources
- engagement with musical technologies to understand and create music.
- attending live performances and discussing structural, stylistic, and aesthetic aspects
- analysing and discussing selected works
- maintaining a reflection journal on development of musical skills
- identifying rhythmic, melodic, and harmonic patterns
- analysing and discussing standard musical structures
- personalised learning activities (e.g. comparison of others’ interpretations of their own repertoire).

Year 10 PHILOSOPHY – Elective Subject

This course traces philosophical themes from the Ancient Greeks to modern philosophers. It includes a mixture of the Philosophy of Science, Religion, Politics and Ethics. The course encourages students to think critically about issues, to see other viewpoints, to appreciate the concept of a worldview, and to identify their own worldviews. It also provides a significant amount of historical background material for Philosophy courses undertaken at SACE level.

Critical and creative thinking skills are encouraged. Students are also encouraged to examine the evidence for their beliefs and to appreciate sound reasoned arguments. Discussions are obviously very important as
students explore their ideas. Assessment focuses both on factual knowledge of the ideas of some of the philosophers and on the sound development of each student’s own ideas.

**Year 10 SPORTS SCIENCE - Elective Subject**

**PHYSICAL ACTIVITY AND PERFORMANCE:** This course is for students who enjoy physical activity and want to develop a deeper understanding of factors affecting performance. It is a good introduction for students who wish to do Senior School PE courses.

Topics will include

- Energy systems as they apply to physical activity
- Fitness principles and methods of training
- Skill learning
- Game analysis and tactical development

Students will have the opportunity to use current sports technology such as GPS tracking devices, heart rate monitors and video analysis to analyse and improve their performance.

Students will also further develop their skills, knowledge and tactical understanding in a range of physical activities. There will be an emphasis on tactical awareness.

Assessment will be 40% theory – 2 lessons, and 60% practical – 3 lessons.

There will be a combination of performance checklists, tests, assignments and laboratories used to assess students.

**Year 10 STEM - Elective Course – One Semester**

*Pre-requisites:* This subject is available to any Year 10 student who is studying Year 10/10A Mathematics, or Year 9 accelerated mathematics students undertaking Year 10/10A, or any Year 11 student who is undertaking Year 11 Mathematics (Methods or Specialist). If Year 11 students wish to take this course they must be aware that no SACE credits will result as it is not a SACE course.

STEM stands for Science, Technology, Engineering and Mathematics. STEM is addressed in the Australian Curriculum through the learning areas of Science, Technologies and Mathematics. The approach is to introduce mathematical concepts for particular problems presented in context within engineering, science or technological areas. Once the new mathematics has been encountered students use this knowledge to solve problems and present findings via reports. The reports may be for example power point displays, posters, written or oral.

Topics covered in 2017 were: investigating the optimal distance and time for travelling on the moon, lunar communications, investigating the rate of technological advance, wind turbines (energy production and optimal sites for them) and a geometrical problem concerning fractional areas within a particular shape.

Students will be involved in critical and creative thinking and presenting their ideas in groups or individually. There will be opportunities to visit sites of research or to have visiting experts in the areas listed above.

Assessment will be based on the grading of reports using performance standards linked to the Australian Curriculum. Reasonableness of results found, or by models produced, is an important element of the learning outcomes.
Year 10 TECHNOLOGY - CAD – Elective Course – One Semester

This one Semester course is aimed at students interested in design, engineering or architecture. Two major topics are covered, **Mechanical Design** and **Architectural Design**.

In **Mechanical Design**, students learn how to use **Autodesk Inventor** to create parts, assemblies, animations and advertisements. Introductory tasks include small printable designs with final products manufactured by the schools 3D printer. The development of a gadget is the major assignment.

In **Architectural Design**, students are introduced to **Autodesk Revit**, creating floor plans, walls, building features like doors and windows, and rendering. The design of a future house is the major as

**Pre-requisite** – *It is strongly recommended that students complete Graphic Tales prior to enrolling in this course.*

Stage 1 TECHNOLOGY - CAD – Elective Course – One Semester (10 Credits)

Stage 1 Computer Aided Design enables students to extend and apply their knowledge and understanding of digital technologies to create and share technical products in both Mechanical and Architectural design fields.

Course focus is on creating designs that effectively communicate and showcase student developed concepts.

In **Mechanical Design** students engage in a range of skills tasks before designing and developing a children’s toy. The final product is printed on the schools 3D printer with product effectiveness tested on a target audience in the Junior School.

In **Architectural Design** students create and showcase a futuristic school building of their own design, ultimately developing an animation of an alternate school layout that includes all buildings developed by the class.

Students can choose either Mechanical or Architectural design as the platform for their major product, researching, designing, developing and evaluating a product based on an identified need.

Students should choose this subject if they are interested in a career in Engineering, Manufacturing, Construction, Architecture, Design or Drafting.

**Pre-requisite** – *Students must have completed Year 9 & 10 Computer Aided Design.*

TECHNOLOGY - MANUFACTURING 2 – Elective Course - One Semester

Aimed primarily at Year 10 students, this semester course focuses on the areas of:

- **Designing**: Problem solving, researching, communicating, ideas, technical drawing, introduction to CAD.
- **Making**: Safety, development of the use of tools, machines and equipment in manufacturing techniques.
- **Critiquing**: Evaluation of commercial products, the student’s own work and processes used, an investigation into the impact of an aspect of technology on society or the environment, futures.
Year 10 TECHNOLOGY – SYSTEMS 2 – Elective Course – One Semester

Systems Technology examines various technological systems as Input — Control — Output. Students examine existing systems and their component parts then apply their knowledge to the design and construction of their own control systems.

This course focuses on the areas of:

- **Electronics**: The nature of electricity and electronics, electrical safety, basic components, designing with electronic circuits, Ohms Law, using a multimeter and circuit board assembly.
- **Machines and Mechanisms**: Motion and forces, simple machines
- **Robotics**: Components and construction, Pilot programming, Future.
- **Electronics**: Electronic devices, sensing circuits, semiconductors, output devices, construction techniques.
- **Machines and mechanisms**: Simple machines, machine efficiency, mechanical advantage, CO2 powered vehicles.
- **Robotics**: Robolab construction, Explorer programming. Futures

Year 10 TECHNOLOGY - SYSTEMS 3 - Elective Course – One Semester

This semester course focuses on the areas of:

- **Energy**: Renewable and non-renewable energy sources. Alternative energy.
- **Electronics**: Semiconductors, Integrated circuits, modelling circuits, operational applications.
- **Digital Electronics**: Boolean logic circuits, digital control, digital computers
- **Robotics**: Automatic control programs, sequential control, sensors, Robolab construction, NXT programming, futures. Students designing and building Robots

TECHNOLOGY - MANUFACTURING

This stream has a focus on woodworking, plastics and metalworking. Students experience designing and working with tools and materials to produce their own projects.

Year 10 TECHNOLOGY – SYSTEMS 2 – Elective Course – One Semester

This semester course focuses on the areas of:

- **Electronics**: Electronic devices, sensing circuits, semiconductors, output devices, construction techniques.
- **Machines and mechanisms**: Simple machines, machine efficiency, mechanical advantage, CO2 powered vehicles.
- **Robotics**: Robolab construction, Explorer programming. Futures

Year 10 TECHNOLOGY - MANUFACTURING 3 – Elective Course - One Semester

Aimed primarily at Year 10 students, this semester course focuses on the areas of:

- **Designing**: Problem solving, researching, communicating ideas, technical drawing, CAD, developing a design folio.
- **Making**: Safety, further development of the use of tools, machines and equipment in more advanced manufacturing techniques.
- **Critiquing**: Evaluation of commercial products, the students’ own work and processes used, an investigation into the impact of an aspect of technology on individuals, society or the environment.
Year 10 VISUAL ARTS - Elective Subject

This course is offered in Semester 1 and 2 and will incorporate a study of both Art and Design components per Semester unit.

This course is a recommended pre-requisite for Stage 1 Art and/or Design and provides opportunities for students to further develop their skills and abilities in the Visual Arts. Greater emphasis will be placed on the generation of original ideas and the development of appropriate support material for major art works.

The process of design is explored in greater depth as students refine their skills and abilities to research and communicate their ideas using a variety of media and forms of presentation. Students will have opportunities to integrate and build upon computing skills used in the presentation of final concepts.

Students are encouraged to develop their ability to work independently using selected media and approaches. The students have the opportunity to develop their skills using a wide range of media that they can apply to their ideas in the Visual Arts.

An historical overview of major Movements is undertaken at this level. Greater emphasis is placed on the refinement of written analysis and the use of subject specific terminology.

Both formative and summative assessment tasks will be undertaken. Homework is an expected requirement of the course.

Year 10 VISUAL ARTS – DESIGN Elective Subject – One or Two Semesters

This course is a continuation from the Year 9 Art-Design course but can also be started at this point. It is a recommended prerequisite for Stage 1 Design or Art.

Distinct areas of Graphics and Visual Communication, Product Design and Environmental Design and other areas of Design will be explored. This course reinforces prior learning in Design and Craft and specifically looks at the construction of ‘briefs’ and their formulation.

Design as applied within the Crafts is also an area of study where Photography, multimedia and jewellery are included. Students will have opportunities to integrate and build upon computing skills used in the presentation of final concepts.

This course looks at terminology used in the field of design and gives the students an opportunity to work on their own ideas using the skills they form in the earlier part of the course in a more independent manner.

Written analysis of both their ideas and using the ideas of other designers is undertaken at this level and leads to the more formal aspects of SACE Stage 1 Design.

Students in Year 11 will be required to complete a semester unit of either Art and/or Design if intending to pursue a study of The Visual Arts at Stage 2. However, TWO semester units (a full year of study) is strongly recommended.