Christ Church
Grammar School

Academic Handbook

Year 9, 2027

Overview

The timetable

The Senior School operates on a 10-day timetable cycle with five 50-minute periods (Periods 1 -5) and one 45 minute period a day (Period 6). The 10 days are organised within a Week A/Week B structure. The timetable differs from Week A to Week B.

Students can access an electronic copy of their timetable on their laptop device through Nexus (nexus.ccgs.wa.edu.au).

Where a day or days are missed for long weekends or public holidays, these are skipped in the timetable. A boy's timetable therefore completes a cycle every two weeks.

With the exception of Thursday, each day begins at 8.30am with a 20-minute tutorial prior to the first period of the day. On Thursdays the period from 8.30am until 9.45am includes Chapel, Assembly, House meetings etc. There are therefore only five periods on a Thursday.

Academic Administration

The Deputy Principal/Director of Studies is responsible for curriculum implementation and curriculum policy from Pre-Primary to Year 12. The Deputy Principal/Director of Studies and the Assistant Director of Studies organise the day-to-day and long-term academic program in the Senior School. In particular, the Assistant Director of Studies is responsible for the timetable.

Questions relating to a course of study should be directed initially to a boy's tutor or Head of House. However, where a boy is new to the School, such queries may be directed to the Assistant Director of Studies.

If there are any concerns, early in the semester, about the electives chosen by a boy, the matter should be discussed with the tutor or Head of House. The issue may then be referred to the Studies Office. If there are good reasons for a change of course, the School will try to accommodate this.

Nexus

Nexus (nexus.ccgs.wa.edu.au) is the School's Learning Management System. In Nexus, students have access to their timetables, class learning resources and due dates for assessments as well as daily information about school activities.

Parents also receive a login to Nexus through which they can access Live Marks, Term Reports, Policies and other information related to their son's school activities.

Homework policy

The School supports the view that homework is an integral part of a student's education. Homework encourages the skills and study habits that are essential for intellectual growth and academic achievement. It is developmental and therefore increases in amount and complexity as the student progresses through the Senior School. The nature of homework can vary from simple reading of text or reference material, formal written work and preparation for a test or classroom exercise, to involved research assignments that may take many weeks to complete. It is also expected that the student will take some responsibility for the allocation of time for revision and review of subjects in the absence of homework that is specifically set. The School encourages the development of independence in determining the type and amount of homework necessary to sustain the day-to-day academic program.

While homework is set in all subjects, not all homework is due to be submitted in the following lesson. Teachers will give advice on the timing of homework. As such, there will be some days when more homework is required than others. It is therefore up to the student, teacher, tutor and parents to manage an organised program of homework time to meet the specific demands of the following day. Students are required to use their paper diary as an organiser and planner for homework and similar activities. For many students, the development and management of such skills will be critical for future academic success.

More information can be found in the School's 'Guidelines for Homework and Study' available in Nexus (Nexus → Policies).

Students are often required to attach a bibliography to assignments and incorporate in-text referencing. The School uses the American Psychological Association (APA) Referencing System.

Assessment & reports

Specific details about subject assessments can be found in the subject descriptions later in this booklet. The information gathered from the in-class assessment program is provided in reports to parents four times a year.

At the beginning of the academic year, parents will be given information about access to the Nexus. This portal enables parents to access boys' assessment results as they are entered by teachers over the course of year. Our recommendation is that parents can best utilise this facility by checking the marks summary once per fortnight with their son and aiming to be supportive and encouraging of his endeavours.

The reports provided for Terms 1, 2, 3 and 4 provide a broad overview of progress, including information about current grade, percentage and rating of a number of work practices. Academic grades are provided on an A - E scale. Each report represents the current status of the student in that subject.

Trimesterised subjects (Biology, Chemistry and Physics in Science) and Unitised subjects (Civics and Citizenship, Economics and Business, Geography and History in Humanities) will be reported on in the term report in which the trimester or unit is completed.

Some subjects (e.g Extension and Support classes) will report on both a West Australian Curriculum Grade and a CCGS grade to provide a clearer indication of a student's learning progress.

Together with these formal reports, there is ongoing communication between the student's classroom teacher and tutor. Thus, tutors and the Head of House can provide parents with early warning of any problems or difficulties. Parents should direct any specific concerns or questions about class work to the tutor in the first instance.

Use of the School diary

The School diary is a key link in the communication between school and home and encourages the development of sound organisational and planning skills. If used to record daily obligations, activities, homework and/or work requirements it will instil sound working habits for school and beyond. Parents and tutors are expected to monitor the diary each week.

Study Lab

After-school academic support is available for all students. Study Lab is held in the CLC on Mondays, Tuesdays, Wednesdays and Thursdays, from 3.15pm to 4.45pm. English and Mathematics specialist staff are available on some of these afternoons, while organisational support is provided for work in other subjects. A number of current and former students also volunteer their assistance. Some boys attend these sessions simply to complete homework, knowing that help is available if they encounter difficulties. For other students, these sessions provide a time to go over work that may have been missed in class. Tutors can provide further details.

Information Technology

The School actively encourages teachers and departments to integrate the use of information technologies into the curriculum. Students are exposed to a huge range of information technology experiences by applying the computing resources to subject-based tasks. Digital tools, including online sources, are extensively used as research tools. Students are guided in best practice use of these tools, especially the development of effective Information Literacy skills.

Year 9 students are expected to bring their laptop device to all their classes (except Physical Education). It will be utilised by teachers as a tool for connected learning in their classrooms. Students are provided with their own email account. Many students use email as a means of transferring files between home and school and for working on collaborative projects. The use of both the internet and email is governed by the School's Internet Acceptable Use Policy, which is available on each boy's device.

Students develop word processing skills by producing reports in a variety of subject areas as well as producing reports or investigations using a variety of media.

Most activities necessitate the student's use of a wide variety of applications and the development of a range of skills. Students make use of the Microsoft suite of software, including, where appropriate, tools such as Read Aloud, Dictate, Immersive Reader and Co-Pilot (Artificial Intelligence).

Textbooks

For subjects where a textbook is utilised, a hard copy textbook will be provided for students. Where possible, an electronic version of the textbook will also be made available to students through their laptop device.

Curriculum Policy

The School's Curriculum Policy and Procedures are available through Nexus (Nexus → Policies). They provide further information about the way in which the curriculum is delivered.

Assessment and Reporting Policy

The School's Reporting and Assessment Policy is available through Nexus (Nexus → Policies). It gives further information about the way in information about student progress is reported to parents and protocols around assessment.

Rewarding Academic Achievement and Endeavour Policy

The School's Rewarding Academic Achievement and Endeavour Procedures is available through Nexus (Nexus → Policies). It gives further information about the way in which Subject and Merit Prizes are awarded.

Year 9 Curriculum

The Year 9 curriculum is made up of mandatory subjects and electives in the Languages, Technology & Enterprise and Arts Learning Areas. All mandatory and elective units are offered over the whole year and are listed below.

All boys will study the mandatory subjects of English, Mathematics, Science, Humanities, Health & Wellbeing and Physical Education & Health.

Extension Classes

Extension classes run in the four core subject areas (English, Humanities, Mathematics and Science). These classes follow a significantly modified learning and assessment program and aim to provide students of high cognitive potential with appropriately challenging learning experiences. Selection criteria for these classes are outlined in the School's Curriculum Policy.

Support Classes

Support classes are run in the four core subject areas (English, Humanities, Mathematics and Science). These classes have lower student numbers and are designed to cater for the needs of boys with specific learning challenges, needs or gaps. The programs in these classes are aligned to the mainstream West Australian Curriculum but the content differentiated, and assessment modified to meet the learning needs of individual students. Recommendations for student access of support classes is made by Heads of Department and classroom teachers. Further information around this process is outlined in the School's Curriculum Policy.

Peter Moyes Centre (PMC)

The Senior Peter Moyes Centre (PMC) caters for students with diagnosed disabilities who are unable to access aspects of the mainstream curriculum. The PMC program covers core subject areas (English and Mathematics) as well as Health and Protective Behaviours, Life Skills (cooking and daily living skills), Community Access, Business Enterprise, Work Experience and ASDAN. All students access mainstream electives in Years 7 – 10.

The overarching vision of the Senior PMC is to prepare students for life after school through developing their independent work skills and increasing their ability to manage themselves in a variety of situations and contexts.

Each student works from an individually developed program called a Documented Plan (DP) which contains learning objectives specific to relevant subject areas. The DPs are developed in consultation with Senior PMC teaching staff, parents/guardians and other relevant stakeholders. The DPs are reviewed biannually.

Placement in the Senior PMC will be discussed upon enrolment or transition into the Senior School and the Co-ordinator of the Senior PMC will be in touch with parents/guardian to conduct a Needs Assessment before a decision regarding placement is made. Where appropriate, mainstream students will be invited to participate in some PMC programs (such as English, Mathematics and ASDAN) to facilitate learning development and enhancement of opportunities post-schooling.

Contact
Mrs Amy Porter
Co-ordinator of Peter Moyes Centre (PMC)

Elective Subject Selection

The choice within the elective program represents a cross section of courses from the School Curriculum and Standards Authority learning areas that are not covered by the mandatory subjects.

Subject Selection for the Year 9 course is made by studying the Subject Outlines in the next section and then completing the online Subject Selection Form. A full list of elective subjects is provided on the next page.

While there are gazetted periods in which students can request changes to elective subjects, students and parents are encouraged to consider their elective subject choices carefully, as it **may not** be possible to make requested changes within the timetable. Students would then be required to continue with their initial selection.

Electives comprise a total of **five** units. One-unit subjects will be studied for one semester; two-unit subjects will be studied for the whole year. To ensure breadth of study, please note the following restrictions:

- Boys may select **at most two** units out of the five Computer Science subjects (Algorithmic Programming, App Development, Bioinformatics, Data Security and Systems and Networking)
- Boys may select **at most one** subject out of the two Drama options (Drama (Full Year) and Drama (Half Year))
- Boys may select **at most one** subject out of the two Music options (Music Advanced and Music In Society)
- Boys may select **at most one** subject out of the two Science options (Astrophysics and Psychology)
- Boys may select **at most two units** out of the three Art half-year subjects (Graphic Design, Photography and Filmmaking, Visual Arts (Half Year)). Visual Arts (Full Year) cannot be selected with any other Art subjects.
- Boys may select **at most two units** out of the three Design & Technology subjects (D&T Engineering, D&T Materials and D&T Mechatronics)

Subjects chosen in Year 9 do not direct what will be studied in Year 10 or later. We encourage boys to take the opportunity to explore their interests and try new things in Year 9.

Students who are intending to continue with the study of a language in Year 10, will need to complete the Year 9 course.

Mandatory	Elective
English Humanities – (Civics & Citizenship, Economics & Business, Geography, History) Mathematics Health and Wellbeing Physical Education Science - (Biology, Chemistry, Physics)	Algorithmic Programming (1 unit) App Development (1 unit) Astrophysics (1 unit) Bioinformatics (1 unit) Chinese (2 units) Creative Writing (1 unit) Data Security (1 unit) D & T – Engineering (1 unit) D & T – Materials (1 unit) D & T Mechatronics (1 unit) Drama (Half Year) (1 unit) Drama (Full Year) (2 units) French (2 units) Graphic Design (1 unit) Japanese (2 units) Music Advanced (1 unit) Music In Society (1 unit) Philosophy (1 unit) Photography and Filmmaking (1 unit) Psychology (1 unit) Systems and Networking (1 unit) Visual Arts (Half Year) (1 unit) Visual Arts (Full Year) (2 units)

Mandatory Subjects

English

The Year 9 English course aims to extend students' understandings and skills by introducing them to more sophisticated texts with increasingly complex issues, structures and language. They begin with the study of contemporary persuasive and imaginative texts, followed by a major novel study and poetry in Term 2. In Term 3, a drama text is studied, along with a unit on electronic advertising, which enriches students' understanding of the media. Term 4 concludes the program with a film study unit. The focus becomes increasingly analytical, with close reading and critical literacy emphasised consistently, and essay structure continuing to develop and mature. Teacher-led discussions, group work and pair work encourage students to be active, thoughtful and curious readers, listeners and viewers.

All students work to consolidate and extend their general and subject-specific vocabulary, including their spelling and grammar, with teachers using a range of strategies to assist them. Creative writing continues to feature prominently in the program, and students are also encouraged to enter a range of internal and external creative writing competitions.

Year 9 students spend one period per fortnight in the CCGS Senior Library, where the Teacher Librarians assist them to select and engage with reading material from a carefully curated collection. The Year 9 Library program is designed to broaden and extend students' reading habits by engaging them with a selection of books that they then actively discuss with the Teacher Librarians. Students are strongly encouraged to continue to read for 20 to 30 minutes every night, to complement this program and further develop their literacy skills.

The formal assessment program is reviewed on an annual basis but is likely to approximate the following schedule. Common Assessment Tasks, which require the whole cohort to sit the same in-class assessment on the same day, are set twice a year and marked by external markers to assist grading comparability.

Assessment Schedule

SEMESTER ONE	**SEMESTER TWO**
Persuasive Writing (Opinion Piece)	Drama Composition
Imaginative Writing (Short Story)	Analytical Writing (Advertising)
Novel Analytical Essay (CAT)	Functional Grammar Test
Poetry Comprehension	Analytical Panel Discussion (Film)

In addition, there will be two Library Tasks and a number of opportunities for formative assessment during the year.

Contacts

Mrs Antonia Suthers
Year 9 Coordinator and Assistant Head of English

Mrs Melanie Hastie
Head of English

Health and Wellbeing

The Health and Wellbeing course aims to develop students' knowledge, skills, values, and processes to care for themselves and others, and to take an active role in extending important life skills, making healthy decisions, evolving individual self-awareness and embracing leadership. Each student in Year 9 studies it for one semester; it covers health, religion, positive psychology and well-being. Students will be

exposed to information to positively influence them in mind, body and spirit.

Health

At Christ Church the underlying focus in the Health area is health maximisation. The course covers three major standards

- Students identify and apply relevant criteria to determine reliability of online health information and whether it is suitable for use in a particular context.
- Students evaluate a range of characteristics of respectful relationships, such as showing respect for self and others, and personal differences and opinions.
- They describe and apply appropriate skills and strategies to resolve and manage conflict within different environments.

Positive Psychology

Positive Education brings together the science of Positive Psychology with best-practice teaching to encourage individuals within their communities to flourish. (Geelong Grammar School, 2011)

Positive Psychology is an umbrella term for work that investigates happiness, well-being, human strength, and flourishing. (Gable & Haidt, 2005)

The program of work is derived from a 'Well-Being Curriculum' based on the principles and findings of positive psychology. The emphasis is on positive interventions, targeting areas that have a substantial evidence base such as happiness, positive emotions, flow, resilience, achievement, positive relationships and meaning. The specific units of work that are covered through the timetable cycle are outlined below.

- Men's Health
- Stress
- Mental Health
- Staying Active
- Issues in Society
- Personal Identity
- Relationships Risks and Sexual Behaviours
- Religion
- Protective Behaviours
- Leadership and Teamwork
- Social Awareness
- Character Strengths
- Introducing Mindfulness
- Well-being practices

Religion

As an Anglican school, Christ Church is committed to Religious Education in its curriculum. At the same time it is sensitive to the varied backgrounds of its students, who are drawn from every major Christian

denomination and every major world faith. In addition to attending Chapel services, each boy in the school will participate in the Religious Education unit, which provides an introduction to the origins, history, beliefs, practices, diversity and relevance of the Christian faith. Whilst boys are encouraged to develop their own personal faith, the School acknowledges that the boy's parents and his place of worship will also play a central role in his religious education.

Contacts

Mr Brad Gardner
Director of The Wynne Centre for Health and Wellbeing

Reverend Nicholas Russell
School Chaplain

Humanities

The Year 9 Humanities course seeks to develop growing sophistication on the part of the students in the ways that they investigate, present and analyse their learning. Building on the skills and experiences of Year 8, students investigate many aspects of Australian society, including examining our democratic rights, our experiences in WWI and the interconnectedness of our economy and society and comparing these with many cultures.

In Year 9, the Humanities subject is divided into four specialised units of Civics and Citizenship, Economics and Business, Geography and History. Students will be taught by three different teachers across the year as they move in their classes from one subject specialist teacher to another. These moves begin toward the end of Semester One and continue throughout Semester Two.

Through the subjects of Civics and Citizenship, Economics and Business, Geography and History, students will have the opportunity to develop 21st Century global skills. These skills are essential to prepare students for an increasingly globalised economy and include questioning and research, analysing, evaluating, communicating and reflecting.

History

The Year 9 History course is designed to further develop the skills of history, particularly in the interpretation of sources as well as developing writing skills. In line with the Western Australian Curriculum, the focus for this year of school is Australian history from the period 1750 – 1914 followed by an in-depth study of World War I and the Australian experience of that conflict.

Economics and Business

The Year 9 course introduces students to the notion of a global economy by looking at Australia's interdependence with many economies around the world, with a focus on trade and globalisation. In response to this, students will examine how business seek to gain a competitive advantage. The Economics and Business unit concludes by exploring the concept of personal financial literacy and examining opportunities, risks and rewards within the economy.

Civics and Citizenship

Students continue to build on their understanding of the concepts of the Westminster system, democracy, democratic values, justice and participation. They examine the role of key players in the

political system and the way citizens' decisions are shaped during an election campaign including the impact of social media on our democracy. Students investigate how Australia's court system works in support of a democratic and just society.

Geography

The focus of Year 9 is initially on the biotic environment and its place in food and fibre production. Students then investigate how societies and cities are connected around the globe including investigating the physical and economic factors involved and the way these factors have influenced the lifestyles of selected communities. A detailed study is undertaken of one Asian and one European city of worldwide significance. Practical skills and geographical investigation are emphasised throughout.

The following themes are covered in Year 9

- Biomes and Food Security
- Geographies of interconnections.

Contact
Mr Andy Greig
Head of Humanities

Mathematics

This Year 9 Mathematics course is taught for eight periods in each 10-day cycle. All boys are required to own a scientific calculator and a Casio ClassPad, both of which are available from the bookroom. The use of these calculators is integrated into almost all topics in the course, and they may both be used up to and including the ATAR Mathematics examinations.

The following units are studied during the year:

1. Reviewing number and financial mathematics
2. Linear equations
3. Pythagoras' theorem and right-angled trigonometry
4. Linear relations
5. Measurement
6. Indices
7. Geometric reasoning
8. Algebraic techniques
9. Probability and statistics
10. Introduction to quadratic equations and graphs.

Class work and formal testing will be used to assess learning. Students will be assessed by tests, investigations, applications and a final examination. Students' level of achievement will inform decisions about whether they study the Mainstream or Advanced West Australian Curriculum course in Year 10.

Students wishing to study Mathematics Methods and/or Mathematics Specialist in Year 11 must study the Year 10 Advanced course. Boys need to achieve a minimum of a B grade in the Year 9 course to be selected to study the Year 10 Advanced Course.

Contact
Mr Taylor Pervan
Head of Mathematics

Physical Education

The Physical Education program in Year 9 focuses on the acquisition of skills in a variety of activities that include throwing, catching, hitting, kicking, running and swimming, in addition to developing each component of fitness and the basics of team play and tactics. The course also covers the basic principles of weight training and familiarisation with the variety of equipment in our facility. The course is both theoretical and practical and covers, equipment, program design and lifting techniques.

Students experience an array of individual and team pursuits including swimming, volleyball, rowing, fitness testing and athletics. Opportunities are provided to develop self-management and interpersonal skills that help students to engage in social interaction within the family, school and community environments.

The course operates over the whole year for six periods per 10-day cycle. Aspects such as skill, game performance, fitness, attitude and behaviour, dress and punctuality will be assessed.

Health Education

The Health Education component of this course is taught as a part of the Health and Wellbeing Development Program (see p. 8 and 9).

Contact
Mr Luke Farmer
Head of Health and Physical Education

Science

The Year 9 Science courses have a strong emphasis on practical work. Students will develop a scientific view and recognition of how science understanding can be applied to their lives and the lives of others. The course aims to stimulate curiosity and promote logical and analytical thinking. Students will build on their understanding through the science inquiry process, which involves making observations, constructing and testing hypotheses and evaluating data. During Year 9, classes study Biology, Chemistry and Physics separately, with specialist teachers.

There are various assessments built into the Year 9 Science courses. These may include

- homework tasks
- formal written tests
- written plans and reports of scientific investigations
- practical laboratory assessments

Science Inquiry Skills

Skills involved in working as a scientist are learnt in the context of the three main subject areas of Physics, Biology and Chemistry. Students will develop the skills to carry out investigations that require them to plan experiments, collect, process and interpret data and to draw conclusions, evaluate and communicate their findings. Students will assess risk within their planning for investigations and address ethical issues associated with their methods.

Biology

The Year 9 Biology course focuses on multicellular organisms and how they rely on coordinated, interdependent body systems respond to changes in the environment. Students study the nervous and endocrine systems, as well as the processes involved in maintaining homeostasis. Technology plays an important role throughout the course, particularly in the plant tissue culture unit, where students use specialised techniques to investigate and manipulate plant growth. Students develop practical skills through activities such as setting up sterile environments, manipulating plant tissue with different hormones, brain dissections and nerve reflex investigations.

Chemistry

Virtually every aspect of life today owes a great deal to the discoveries and work of chemists. They are involved in developing new medicines, manufacturing new materials and researching better ways to make existing ones. Many of the environmental challenges that we presently face will be solved by the innovation of chemists.

In Year 9 students will study a variety of topics in Chemistry, including atomic structure, elements and compounds, formulae and equations, the carbon cycle, acids and bases and rates of reaction. Through a practical, laboratory-centred approach, students will develop skills and understanding of chemical reactions and equation writing. They will gain an appreciation for the structure of the Periodic Table in the understanding of Chemistry and examine the role of acids and bases in our everyday lives. Finally, they will study collision theory and examine, through investigation, the factors that make chemical reactions fast or slow.

Physics

The study of Physics is concerned with understanding the nature of forces and motion, and matter and energy. In the Year 9 Physics course, students will focus on developing an understanding of the transfer of energy through different mediums. Through use of wave and particle models, students will investigate

the transfer of energy by light, sound and heat. Students will examine the electromagnetic spectrum and how the different parts of the spectrum are used in our everyday lives and also apply their knowledge of the physical and thermal properties of materials and how they are used in various applications. There will be a strong emphasis on discovery through practical work and investigation and students will use both qualitative and quantitative techniques. Contexts covered may include energy efficient design and factors affecting heat transfer.

Contact

Mrs Megan Caporn	Ms Sharyn Bana	Mr Jacob Marai	Mr Brian Finnemore
Head of Science	Head of Biology	Head of Physics	Head of Chemistry

Elective Subjects

All electives run for 6 periods per 2-week cycle.

Some electives run for a whole year (2 units), other electives run for a single semester (1 unit). Students each complete 5 units worth of electives.

Algorithmic Programming (1 unit)

The creation of efficient and elegant algorithms is integral to all aspects of modern Computer Science. In this course students will explore and use greedy algorithms and dynamic programming to solve real-life problems, including how to find the shortest path in a network and how to solve the backpack problem.

Students will implement each of the algorithms using the Python language, and then use that implementation to solve a range of interesting problems. For each algorithm students will determine the time complexity as a measure of how efficient it is, allowing different solutions to be compared. Students participating in this course will get to understand and use a wide range of famous algorithms as well as learning new ways of representing data, such as linked lists and matrices.

This course will assume that students are comfortable with using the Python language and will cover a number of advanced programming techniques. For this reason, it is **highly recommended** that students who choose this course achieved **an A or B grade in Digital Thinking in Year 8**. Students who did not achieve an A or B grade are advised to select App Development as an appropriate alternative.

Although not required, students are encouraged to take this course in combination with either Bioinformatics or App Development.

Contact
Mr Steve Morrell
Head of Computer Science (Term 3 onwards)

App Development (1 unit)

In this course students will have the opportunity to develop their computational thinking skills through the use of the Python programming language. Building upon the skills they have developed in Years 7 and 8, they will develop interactive software applications with engaging Graphical User Interfaces, including the opportunity to design and create their own Arcade Game.

Students will start by deepening their understanding of the key programming concepts of making decisions and using loops to repeat actions. They will apply these core skills to some standard program design patterns that will allow the development of interactive software solutions that will react to different user input. As their skills improve, students will develop their understanding of lists and functions to make their programs more efficient and allow them to produce more elegant solutions to complex problems.

By making use of external libraries and frameworks, students will learn how to quickly and easily incorporate complex features into their software. The course will involve a number of open-ended projects that will give students the opportunity to extend their understanding and explore the use of more advanced data structures such as dictionaries and objects.

This course is designed to build upon the skills developed in Year 8, so it is highly recommended that students who choose this course achieved **at least a C grade in Digital Thinking in Year 8**.

Contact
Mr Steve Morrell
Head of Computer Science

Astrophysics (1 unit)

Astronomy and astrophysics are at the forefront of scientific discovery, with Western Australia becoming a centre of excellence throughout the world in this field. Students will gain an understanding of several astrophysical theories and practices. The history of astronomy and its cultural impacts are also explored. At the same time, students will improve their research and analytical skills and develop an understanding of recent advances made within astronomy and astrophysics.

The one-unit course will cover the terrestrial to the extraterrestrial – the Earth, the Moon and Sun, stars, galaxies, black holes, quasars, pulsars, space exploration and rocketry. Students will be particularly looking at radio astronomy from the Parkes Telescope to the SKA project which is currently underway.

Contact
Mr Jacob Marai
Head of Physics

Bioinformatics (1 unit)

Bioinformatics involves using computer analysis to solve information problems in the life sciences. The field largely involves using the power of computers to analyse biological datasets to develop cures and propose solutions in the biological and environmental sciences. Some common applications of Bioinformatics include sequencing of DNA, modelling of biomolecules and examining the evolutionary relationships of biological systems.

Throughout the semester students will learn to implement a variety of algorithms designed to aid in the analysis of data to find patterns and relationships within that data. Techniques commonly used range from the use of applied mathematics and statistics to dynamic programming and artificial intelligence.

This course is designed to provide students with opportunities in Computer Science at an advanced level, beyond what is usually offered in Year 9. For this reason, it is **highly recommended** that students who choose this course **achieved an A or B grade in Digital Thinking in Year 8**. Students who did not achieve an A or B grade are advised to select App Development as an appropriate alternative.

Although not required, students are encouraged to take this course in combination with Algorithmic Programming.

Contact
Mr Steve Morrell
Head of Computer Science

Chinese (2 units)

In Chinese, boys will acquire more advanced competencies in Communicating and Understanding. Through topics of particular interest to boys, students will improve competency in their own language and how it functions. Students will

- gain a deeper understanding of linguistic conventions
- critically reflect on their own and other cultures and values
- and prepare themselves for the Year 11 and 12 courses

Boys are assessed across Communicating and Understanding each term. Chapter tests of new grammar, characters and vocabulary are set at least twice a term. Continuous, less formal assessment is carried out during the year. We incorporate a cross-curricular unit within the course where the immersive language environment becomes a Geography classroom for a short period of time. The Languages Department also offers a bi-annual China tour for students interested in immersing themselves in the language and culture.

This stream follows the **Year 7-10 Sequence** and is designed to prepare students for the ATAR Chinese: Second Language stream.

ATAR Second Language courses are aimed at students for whom the language for which they are applying is a second (or subsequent) language. These students:

• have typically learnt everything they know about the language and its culture through classroom teaching in an Australian school or similar environment, where English is the language of school instruction

• have typically studied the language for 200–400 hours at the commencement of Year 11

• may have experienced some short stays or exchanges (less than two years in total) in a country where the language is a medium of communication

• do not use the language for communication outside the language classroom

• are not exposed to the language outside the language classroom. That is, students are not spoken to in the language by members of their immediate or extended family, or community members and friends.

Students with background in Chinese should contact the Head of Languages, Mr Marcus Sharp, to discuss their language choice for Year 11.

Homework

Regular practice reviewing words and grammatical concepts learned is fundamental in the acquisition of a language and as such, forms an integral part of the course. In Year 9, we expect boys to spend 15-20 minutes each evening reviewing words and grammatical concepts covered in class in addition to any specific homework set by the teacher. Using their Education Perfect platform, students will find it easy to consolidate their learning and build proficiency in their target language.

Contact
Mr Marcus Sharp
Head of Languages

Creative Writing (1 unit)

Year 9 Creative Writing gives students the opportunity to engage with language and ideas on a personal level through the production and exploration of fiction and non-fiction texts.

The elective is based around four project pieces which give students the opportunity to experiment with a range of language structures as well as focusing on refining their written expression. The course gives talented writers an additional avenue to have their talents recognised through competitions such as *The West Australian's* Young Writers and Young Photojournalist competitions. The diversity of assessment and text types covered in our study of travel writing, urban legends, personal memoirs and poetry allows for each of the boys to find their own niche within the broader field of creative writing.

The course would be suitable for budding creative writers as well as those seeking to consolidate their fundamental English skills.

Contact
Ms Melanie Hastie
Head of English

Data Security (1 unit)

Have you ever wondered how to send a secret message? Or how to keep your personal information safe? In today's world these are increasingly important questions that we need to know the answer to.

In this course students will learn how to keep their personal data safe. We will start by looking at cryptography – the art of preventing other people from reading our messages by hiding their meaning. We will look at a number of famous ciphers, including the Caeser Cipher, how the Nazis used the Enigma machine to hide their messages from the Allies and how cracking the Enigma code helped bring the war to an end. During the course students will create their own ciphers and will try to crack other ciphers using their Python programming skills.

After learning how to keep data secret, students will look at how to prevent the wrong people getting access to our data. We will look at how to set up user accounts on a system and set the permissions allow different users access to information they need, whilst making sure they can't get to the information they shouldn't be able to see.

Students are able to choose up to two Computer Science courses, including this course. The other recommended Computer Science courses are App Development and Systems and Networking.

Contact
Mr Steve Morrell
Head of Computer Science

Design & Technology – Engineering (1 unit)

Design and Technology – Engineering provides students with the opportunity to develop skills in the use of technology in a practical setting. This course aims at developing in students an understanding of the **materials**, **information** and **systems** that are appropriate to the design and manufacture of products to meet human needs. The underlying focus is the **technology process**, of which the elements of investigating, devising, producing and evaluating are fundamental components. These outcomes (shown in bold type above) are achieved through two courses of study, each of one semester's duration. Students can select both courses.

This subject is suited to those students who are interested in and enjoy working with engineering type projects. Students can expect to build upon their knowledge and skills acquired in Year 7 and Year 8 Design and Technology, particularly in the area of computer-aided drawing and learning how to use sophisticated software in 3D modelling and computer-aided manufacturing. Students are also introduced to electronics and robotics.

Assessment of achievement of the outcomes for these subjects takes the following forms

- Design development (20%) - development of design folios using IT and including freehand and computer-aided drawing
- Practical project production (70%) - manufacture of practical projects in resistant materials using numerically controlled machinery
- Response (10%) – completion of theoretical assignments and written testing of understanding.

Contact
Mr Alec Barbour
Head of Design & Technology

Design & Technology – Materials (1 unit)

Design and Technology – Materials provides students with the opportunity to develop skills in the use of technology in a practical setting. This course aims at developing in students an understanding of the **materials**, **information** and **systems** that are appropriate to the design and manufacture of products to meet human needs. The underlying focus is the **technology process**, of which the elements of investigating, devising, producing and evaluating are fundamental components. These outcomes (shown in bold type above) are achieved through two courses of study, each of one semester's duration. Students can select both courses.

This subject is suited to those students who are interested in and enjoy working with resistant materials, particularly wood and metal. Students can expect to build upon the knowledge and skills acquired in Year 7 and Year 8 Design and Technology, learning how to use a range of new hand tools, power tools and machinery. The underlying focus of this course is the technology process, with particular emphasis on the design and construction of the CO2 Dragster.

Assessment of achievement of the outcomes for these subjects takes the following forms

- Design development (20%) - development of design folios using IT and including freehand and computer aided drawing
- Practical project production (70%) - manufacture of practical projects in resistant materials using numerically controlled machinery.
- Response (10%) – completion of theoretical assignments and written testing of understanding.

Contact
Mr Alec Barbour
Head of Design & Technology

Design & Technology - Mechatronics (1 unit)

This course is designed for students who have enjoyed the Digital Thinking course and would like to extend their skills to controlling electrical components – Physical Computing.

Students will design, assemble and develop control strategies for an antonymous guided vehicle, a MazeBot, that can find its way through a physical maze. Students will be introduced to techniques for CAD/CAM production, assembly and operation of electronic/electrical circuits, developing control strategies for an Arduino microcontroller, and testing and refining the operation of the MazeBot.

Students will be involved with various mechanical, electrical and programming tasks, including

- Designing in 3D using the Catia software suite
- Preparing files for, and operating rapid prototyping equipment such as 3D printer and laser cuter
- Assembly and testing of reduction gearboxes
- Assembly and testing of electrical and electronic circuits, infra-red detectors, switching, power supplies, DC motors, etc
- Introduction to Flowol software to program an Arduino microcontroller, to regulate the function and timing of these circuits
- Refining the performance of mechatronic devices to achieve set tasks

Contact
Mr Alec Barbour
Head of Design & Technology

Drama (Full Year) (2 units)

In Drama, boys develop confidence and self-esteem to explore, depict and celebrate human experience, take risks and challenge their own creativity through a collaborative experience. Students are assessed through a variety of exciting and challenging activities of creation, performance and reflection. They experiment with techniques in movement, voice and characterisation, to shape and focus theatrical effect for an audience. They reflect, respond and evaluate drama and become critical, informed audiences.

Boys are assessed through the key activities of rehearsal and co-operation, performance and reflection. They explore and communicate ideas and learn particular processes and skills to enable them to work with drama forms, styles, conventions and technologies. They reflect, respond and evaluate drama and become critical, informed audiences.

The year concludes with the class showcasing their skills in a fully realised scripted play in Semester Two for a public audience.

The Year 9 Full Year course explores

- Acting
- Mask and Commedia dell'arte
- Improvisational Theatre
- Shakespeare and Stage combat
- Issue based drama

- Set and Costume Design
- Scripted Production for a public audience in Semester Two

Being involved in the making and creating of drama is a unique and exciting way for students to better understand themselves and their world.

Contact
Mr Gregory Jones
Head of Drama

Drama (Half Year) (1 unit)

In Drama, boys develop confidence and self-esteem to explore, depict and celebrate human experience, take risks and challenge their own creativity through a collaborative experience. Students are assessed through a variety of exciting and challenging activities of creation, performance and reflection. They experiment with techniques in movement, voice and characterisation, to shape and focus theatrical effect for an audience. They reflect, respond and evaluate drama and become critical, informed audiences.

The Year 9 Drama – Half Year course is designed to extend their performance skills in theatrical styles and contexts. Students work independently and collaboratively, learning time management skills, showing initiative and demonstrating leadership and interpersonal skills.

The course explores

- Acting
- Mask and Commedia dell'arte
- Improvisation
- Shakespeare and Stage Combat
- Issue based drama
- Set Design

Being involved in the making and creating of drama is a unique and exciting way for students to better understand themselves and their world.

Contact
Mr Gregory Jones
Head of Drama

French (2 units)

In French, boys will acquire more advanced competencies in Communicating and Understanding. Through topics of particular interest to boys, students will improve competency in their own language and how it functions. Students will:

- gain a deeper understanding of linguistic conventions
- critically reflect on their own and other cultures and values
- and prepare themselves for the Year 11 and 12 courses

Boys are assessed across Communicating and Understanding each term. Boys will complete regular vocabulary and pronunciation tests throughout the term and will have an assessment at the end of each unit. Boys will also prepare for brief oral tests and learn a few lines of French poetry off by heart. We incorporate a cross-curricular unit within the course where the immersive language environment becomes a Geography classroom for a short period of time. The Languages Department currently offers a bi-annual French tour and exchange program for students interested in immersing themselves in the language and culture.

This stream follows the **Year 7-10 Sequence** and is designed to prepare students for the ATAR French: Second Language stream.

ATAR Second Language courses are aimed at students for whom the language for which they are applying is a second (or subsequent) language. These students:

• have typically learnt everything they know about the language and its culture through classroom teaching in an Australian school or similar environment, where English is the language of school instruction

• have typically studied the language for 200–400 hours at the commencement of Year 11

• may have experienced some short stays or exchanges (less than two years in total) in a country where the language is a medium of communication

• do not use the language for communication outside the language classroom

• are not exposed to the language outside the language classroom. That is, students are not spoken to in the language by members of their immediate or extended family, or community members and friends.

Homework

Regular practice reviewing words and grammatical concepts learned is fundamental in the acquisition of a language, and as such, this forms an integral part of the course. In Year 9, we expect boys to spend 15-20 minutes each evening reviewing words and grammatical concepts covered in class in addition to any specific homework set by the teacher. Using their Education Perfect platform, students will find it easy to consolidate their learning and build proficiency in their target language.

Contact
Mr Marcus Sharp
Head of Languages

Graphic Design (1 unit)

The creation of graphics and architectural illustrations are explored in the **Graphic Design** course. This elective is suited to students with imagination, artistic skills and entrepreneurial ambitions. Students who enjoy technology, and creativity, will learn to engage and entertain audiences through eye catching visuals created in the Adobe Creative Suite.

Graphic Design is made up of 75% **Art Making** (inquiry and resolved digital artworks) and 25% **Art Responding** (image analysis, interpretation and response). Assessments may include but are not limited to, *logos, shirt designs, posters, packaging, social media graphics, magazine covers, album art, game case booklets, advertisements, interior, exterior and environmental illustrations.*

- The **Graphics** component of the **Graphic Design** course tackles *digital illustration*, where students learn both hand and computer drawing skills and how to apply design conventions.
- The **Architectural** component challenges students with *interior and exterior illustration*, with students developing skills in multimedia rendering and sketching.

Graphic Design students are exposed to a variety of projects, allowing them to explore different techniques and software tools. The capacity to demonstrate creativity and problem-solving abilities, communicate messages and shape user experiences through visual solutions is becoming increasingly sought after in non-traditional art industries.

Students with strong interests in digital creation should consider partnering **Graphic Design** with the complimentary **Photography and Filmmaking** or **Visual Arts (Half Year)**. Willingness to learn Adobe Illustrator and Photoshop is required. **Graphic Design** can be studied in preparation for **Year 10 Design & Media**.

Contact
Mr Timothy Excell
Acting Head of Art

Japanese (2 units)

In Japanese, boys will acquire more advanced competencies in Communicating and Understanding. Through topics of particular interest to boys, students will improve competency in their own language and how it functions. Students will

- gain a deeper understanding of linguistic conventions
- critically reflect on their own and other cultures and values
- and prepare themselves for the Year 11 and 12 courses

Boys are assessed across Communicating and Understanding each term. Boys will participate in a range of activities and can use modern technology to further strengthen their competency in the Japanese language. We incorporate a cross-curricular unit within the course where the immersive language environment becomes a Geography classroom for a short period of time. The Languages Department currently offers a bi-annual tour and exchange program to Japan for students interested in immersing themselves in the language and culture.

This stream follows the **Year 7-10 Sequence** and is designed to prepare students for the ATAR Japanese: Second Language stream.

ATAR Second Language courses are aimed at students for whom the language for which they are applying is a second (or subsequent) language. These students:

• have typically learnt everything they know about the language and its culture through classroom teaching in an Australian school or similar environment, where English is the language of school instruction

• have typically studied the language for 200–400 hours at the commencement of Year 11

• may have experienced some short stays or exchanges (less than two years in total) in a country where the language is a medium of communication

• do not use the language for communication outside the language classroom

• are not exposed to the language outside the language classroom. That is, students are not spoken to in the language by members of their immediate or extended family, or community members and friends.

Homework

Regular practice reviewing words and grammatical concepts learned is fundamental in the acquisition of a language and as such, forms an integral part of the course. In Year 9, we expect boys to spend 15-20 minutes each evening reviewing words and grammatical concepts covered in class in addition to any specific homework set by the teacher. Using their Education Perfect platform, students will find it easy to consolidate their learning and build proficiency in their target language.

Contact
Mr Marcus Sharp
Head of Languages

Music Advanced (1 unit)

It is very important that our talented musicians are given the opportunity to develop their potential, both individually and with the support of their fellow musicians. This course, in conjunction with the co-curricular Music Program, is designed to increase musical awareness, develop musicianship and provide stimulating and challenging creative and performance activities. It is assumed that students enrolling in this specialist course are already learning a musical instrument and have some prior musical background.

The main components of this course are:

- **Learn through song**

  Students learn key musical aural and theory concepts through singing, playing and composing. They also complete written aural and theory work to complement the practical learning.

- **Through the Years**

  Students study music from the Baroque period to the 1990's, learning about how music has changed and developed through the years.

- **Ancestry of Music**

  Students complete a passion project – researching, analysing and then performing a song or piece that represents their musical ancestry, or musical ancestry of a country/artist/composer they are passionate about; students present their research and performance for the class.

- **Performance**

  Students give solo (with accompanist) and chamber performances for the class

Contact
Ms Chiara Kingwell
Director of Music

Music In Society (1 unit)

This course is designed to provide exciting experiences in creating, listening to and learning about a variety of music, including contemporary rock/pop music, video game music and electronic dance music. Students do not need a prior background in music to join this course.

The three main components of this course are:

- **Rock Band Project**
  The basic learning of guitar, bass guitar, drum kit, vocals and keyboard in preparation for a rock band project.

- **DJing and Video Game Composition**

  The creation of music for a video game character of their choice through the use of composition software using pre-made and recorded melodies/beats. Students also use DJ decks to learn how to beat match and blend songs, performing a short DJ set for the class.

- **Basic Theory**

  Learning more about how music works through the study of basic music theory; advancing music reading and performing skills.

Contact
Ms Chiara Kingwell
Director of Music

Philosophy (1 unit)

Humans often ponder over why *things* are the way they are, what *things* mean, how we come to know about *things*, and how this influences the way we ought to live our lives. When we study Philosophy, we train our minds to think about these issues from an objective standpoint, using reason. Boys who study this elective will explore philosophical responses to a range of thought-provoking questions such as:

- What makes an action morally right or wrong?

- What are the best arguments for and against the existence of God?

- Are we morally justified in killing animals for food?

- Is torture ever morally permissible?

- Should the worst criminals be executed, or just imprisoned?

- What are the ethics surrounding abortion?

- What are the ethics surrounding euthanasia?

- Is war always wrong?

- Should governments try to make our society more free or more fair?

The strong emphasis on reasoning in this course will provide boys with valuable transferable skills. The ability to analyse, clarify, evaluate and advance a rational argument will aid their progress in other subjects and equip them for future study.

Boys are assessed on their ability to advance convincing, rational arguments within the context of the philosophical themes studied. Ordinarily this will involve extended argument responses, though problem-solving and project-based work will also be incorporated into assessments.

Students need an open mind and a willingness to apply reason to enduring philosophical themes.

Contact
Mr Andy Greig
Head of Humanities

Photography & Filmmaking (1 unit)

Capturing digital photographs, and filming content is explored in the **Photography & Filmmaking** course. This elective is suited to students with imagination, critical eyes and desire to expand their employable skills. Students who enjoy technology and capturing images, will learn to engage and inspire audiences with eye catching visuals created in the Adobe Creative Suite.

Photography & Filmmaking is made up of 75% **Art Making** (inquiry, resolved digital and film-based artworks) and 25% **Art Responding** (image analysis, interpretation and response). Assessments may include but are not limited to, *portraits, product, still life, landscape, fine art, conceptual, fashion and architectural photography, social media content, short films, trailers, music video, and advertising.*

- The **Photographic** component of **Photography & Filmmaking** tackles *digital imaging*, with students handling cameras and combining composition techniques with digital studio manipulation.

- The **Filmmaking** component challenges students with *content creation*, with students developing skills in storyboarding, cinematography, editing, sound design, lighting and camera operation.

Photography & Filmmaking students are exposed to a variety of projects, allowing them to explore different techniques and software tools. The capacity to demonstrate teamwork, be digitally literate, communicate messages and shape user experiences through visual solutions is becoming increasingly sought after in non-traditional art industries.

Students with strong interests in digital creation should consider partnering **Photography & Filmmaking** with the complimentary **Graphic Design** or **Visual Arts (Half Year)**. Willingness to learn Adobe Photoshop and Rush is required. **Photography & Filmmaking** can be studied in preparation for **Year 10 Design & Media**.

Contact
Mr Timothy Excell
Acting Head of Art

Psychology (1 unit)

Psychology is the scientific study of how people think, feel and act. It is a systematic exploration into the complexities of human behaviour based on evidence gathered through experimental research.

This semester long course introduces students to a breadth of knowledge focusing on the psychology of self and others. We will study memory and learning, social psychology and aspects of forensic science.

Assessment for this subject takes the following forms:

- Project work – the forensic unit will explore criminal profiling of serial killers.
- Teach a lesson – create and teach a lesson to the class on a psychological concept.
- Course Booklet completion – submit class work books as the unit progresses.
- Investigations – students plan and conduct studies on human subjects to answer a research question based on personality and sport and one to do with taste and perception.

Contact
Ms Kimberley Bryant
Acting Head of Biology (Term 2)

Ms Sharyn Bana
Head of Biology (Term 3 onwards)

Systems and Networking (1 unit)

How does a computer system work? How does one computer talk to another computer? These are just some of the questions that we will investigate in this course.

Systems and Networking will give you the chance to learn more about the different components inside your computer and how they work. Once you have learnt what all the different parts are you will be given the opportunity to build your own computer. After building their own computer systems, students will learn how to install an operating system on their computer and set that system up. Once everyone has built a computer, students will look at how computers are able to communicate and what devices are needed to set up a network. Students will then have the opportunity to set up a small network together and diagnose and solve various network issues.

Students are able to choose up to two Computer Science courses, including this course. The other recommended Computer Science courses are App Development and Data Security.

Contact
Mr Steve Morrell
Head of Computer Science

Visual Arts (Half Year) (1 unit)

Bespoke 2D and 3D projects are explored in the **Visual Arts (Half Year)** course. This elective is suited to students wanting to explore their self-expression and extend their knowledge of visual arts practice and language. Students who enjoy a 'hands on' approach will learn to communicate messages and provoke thought through eye catching visuals created in the Art Studio.

Visal Arts (Half Year) is made up of 75% **Art Making** (inquiry and resolved 2D and 3D artwork) and 25% **Art Responding** (image analysis, interpretation and response). Assessments may include but are not limited to, *illustrations, painting, textiles, printmaking, digital media, ceramics, installation art, architectural art, traditional and mixed media sculpture.*

- The **2D** component of the **Visual Arts (Half Year)** course tackles *drawing and painting*, where students develop an understanding of compositional structures, and incorporate arts inquiry to create unique, personal responses.
- The **3D** component challenges students with *sculpture*, with students exploring and applying a range of techniques to best represent themes, concepts or subject matters.

Visual Arts (Half Year) students are exposed to a variety of projects, allowing them to explore different techniques, adapt and manipulate materials and operate studio tools. The capacity to demonstrate innovation and perseverance, communicate messages and shape user experiences through visual solutions is becoming increasingly sought after in non-traditional art industries.

Students with strong interests in the creative arts should consider partnering **Visual Arts (Half Year)** with **Graphic Design** or **Photography and Filmmaking**. **Visual Arts (Half Year)** can be studied in preparation for **Year 10 Visual Arts**.

Contact
Mr Timothy Excell
Acting Head of Art

Visual Arts (Full Year) (2 units)

A greater range of bespoke 2D and 3D projects are explored in the **Visual Arts (Full Year)** course. This elective is suited to students wanting to explore their self-expression and extend their knowledge of visual arts practice and language. Students who enjoy a 'hands on' approach will learn to communicate messages and provoke thought through eye catching visuals created in the Art Studio.

Visal Arts (Full Year) is made up of 75% **Art Making** (inquiry and resolved 2D and 3D artwork) and 25% **Art Responding** (image analysis, interpretation and response). Assessments may include but are not limited to, *illustrations, painting, textiles, printmaking, digital media, ceramics, installation art, architectural art, traditional and mixed media sculpture.*

- The **2D** component of the **Visual Arts (Full Year)** course tackles *drawing and painting*, where students develop an understanding of compositional structures, and incorporate arts inquiry to create unique, personal responses.
- The **3D** component challenges students with *sculpture*, with students exploring and applying a range of techniques to best represent themes, concepts or subject matters.

Visual Arts (Full Year) students are exposed to a variety of projects, allowing them to explore different techniques, adapt and manipulate materials and operate studio tools. The capacity to demonstrate innovation and perseverance, communicate messages and shape user experiences through visual solutions is becoming increasingly sought after in non-traditional art industries.

Students with strong interests in the creative arts should consider **Visual Arts (Full Year)** as the breadth of studio work builds a cumulative skill set that assists in preparation for **Year 10 Visual Arts**.

Contact
Mr Timothy Excell
Acting Head of Art

Studies Office Contacts

Mr Mahendra Vaswani

Deputy Principal / Director of Studies

Telephone: 9442 1543

Email: mvaswani@ccgs.wa.edu.au

Dr Holly Rose

Assistant Director of Studies

Telephone: 9442 1572

Email: hrose@ccgs.wa.edu.au