

IONA COLLEGE



STUDIES GUIDE

YEAR 9

2023

This Studies Guide is designed to:

- give you an overview of the subjects available to students in Year 9
- familiarise you with the details of core subjects that all students must study;
- be of assistance to parents and their sons in making choices for elective subjects.

Necessarily, this overview of subjects offered here at Iona College is brief. Should you require more specific details, please contact the Head of Faculty or subject teacher who will be more than willing to assist.

Core subjects are subjects that all students must study. In 2022, these subjects are:

Religious Education

Mathematics

English

History

Science

Health & Physical Education (Sport)

In addition, students choose three elective subjects for Year 9 from the following subject list:

Aerospace

Commerce

Marine Studies

Music

Design

Drama

Digital Technologies

Industrial Technology

Art and Film

Japanese

Physical Education

Science, Technology, Engineering and Maths (STEM)

Elective choices are an opportunity for you to explore and discover your own particular talents and interests. Developing and discovering these talents and interests involves your own personal development and the gradual process of becoming aware of what you might like to do in the future. This whole process takes place in both the core subjects and the elective subjects. What elective subjects require is that you and your parents make some decisions now. You must think about the things you might like to do and investigate these subjects yourself. Choosing elective subjects is a matter of personal choice – based on your talents and your interests. You are not required to make career choices now. The nature of Iona’s core subjects means that most career pathways are still open to you at the end of Year 10 studies.

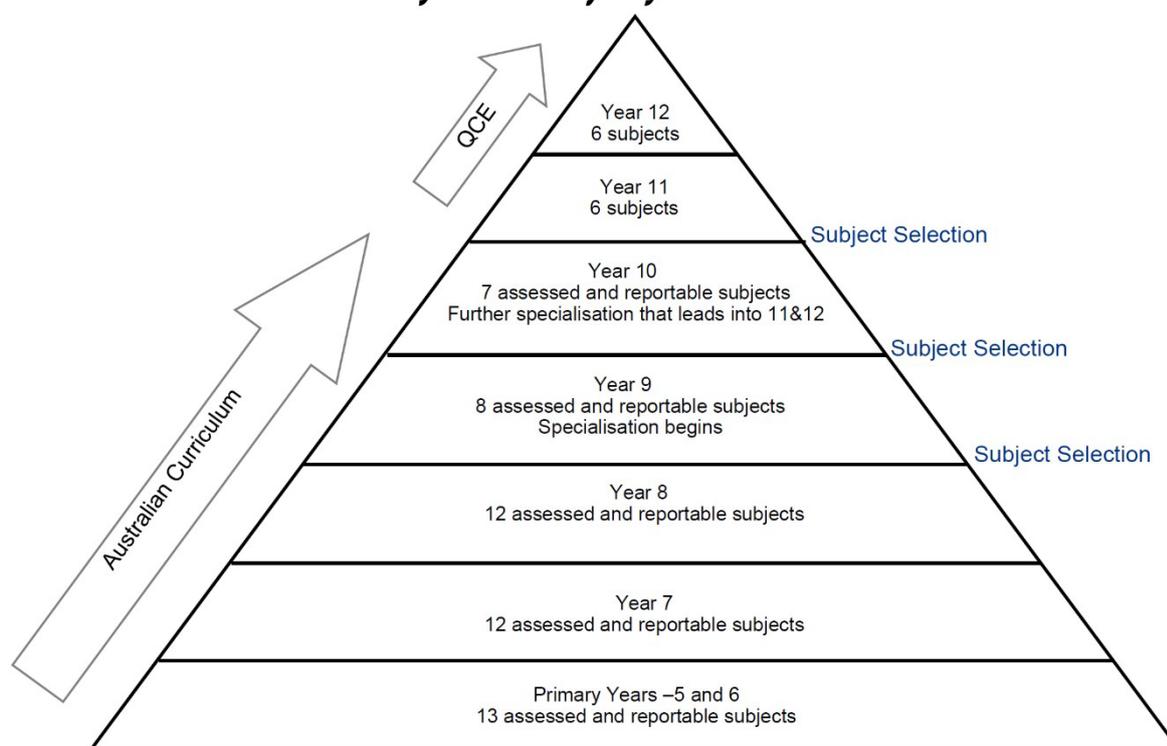
However, it is very important to note the exceptions to this rule of thumb:

Japanese must be studied in Years 9 and 10 for students wishing to study this subject in Years 11 and 12.

Notwithstanding the above information, all students should be aware that most courses in Years 11 and 12 have prerequisites for entry. These are related the levels of achievement and behaviours required to attain success in the senior years. In general, a minimum of a C standard is required for entry to the ATAR pathway. Some higher prerequisites are required for entry to Mathematical Methods, Specialist Mathematics and some Science courses. Students wishing to undertake Industrial Technology in Years 11 and 12 must have consistently demonstrated safe practices in the workshop during Years 9 and 10.

The Year 9 programme is the first step in the specialisation of subjects, leading students onto their Senior pathway.

Pyramid of Specialisation



POSSIBLE SUBJECT PROGRESSIONS AND PATHWAYS (as at June 2021)

	YEAR 9	YEAR 10	YEAR 11/12
Arts	Drama	Drama	Drama
	Music	Music	Music
	Art and Film	Art and Film	Film, Television & New Media Visual Art Cert III Screen and Media (Yr 11)** Visual Art in Practice*
Commerce	Commerce	Commerce	Accounting Business Economics Legal Studies Certificate III in Business **
Design & Innovation	Aerospace	Aerospace	Aerospace Systems
	Design	Design	Design Industrial Graphics Skills *
	Digital Technology	Digital Technology	Digital Solutions
	Industrial Technology	Industrial Technology	Building and Construction Skills * Engineering Skills * Industrial Technology Skills *
English & Languages	English	English	English Literature Essential English *
	Japanese	Japanese	Japanese
STEM	Science, Technology, Engineering and Maths (STEM)	Introduction to General Mathematics Introduction to Mathematical Methods Introduction to Essential Mathematics Physical Science Life Science	General Mathematics Mathematical Methods Specialist Mathematics Essential Mathematics * Chemistry Physics Biology Marine Science Physical Education

Religion & Society	Humanities & Social Sciences	Humanities & Social Sciences	Ancient History Modern History Geography Study of Religion
	Religious Education	Religious Education	Study of Religion Religion and Ethics *
Science & Health	Science Marine Science	Physical Science Life Science	Chemistry Physics Biology Marine Science Physical Education
	Physical Education	Physical Education	Physical Education #Certificate III in Fitness ** #Certificate III in Sport and Recreation **

* Applied subject

** Vocational Education & Training (VET) Course – additional fees apply

Faculty of Religion and Society

RELIGIOUS EDUCATION

(Core Subject)

The Religious Education programme in Year 9 at Iona College has been developed according to the guidelines of the Archdiocese of Brisbane. The programme will focus on a selected balance of learning modules that will enhance student learning and broaden their understanding of their faith. Students will study units which are underpinned by the four inter-related strands of Sacred Texts, Beliefs, Church and Christian Life.

Topics explored in the Year 9 course include:

- The Lukan Jesus and contemporary charities which emulate the actions of Jesus with marginalized communities.
- Human existence and the concepts of good and evil, with a particular focus on racism in today's world.
- Christian wisdom and the work of a modern Catholic personality enacting their beliefs.
- Incarnation and the significance of miracles in the time of Jesus and today.

In addition to a study of the above modules, students will have opportunities to enrich the spiritual dimension of their lives through experiences of prayer and liturgy e.g. College Masses, Sacrament of Reconciliation, classroom prayer, meditations and year level camps.

HUMANITIES AND SOCIAL SCIENCES (HASS)

(Core Subject)

This course has been designed to meet the requirements of the National Curriculum and focuses on the foundations of the contemporary world. It provides the opportunities for students to engage in worthwhile historical inquiry so that they might develop knowledge, values and abilities which enable them to be aware and capable participants in the modern, democratic Australian society. The main aim of the programme in Year 9 is to provide students with an understanding of the recent past and how it has affected the way we live today. The students will examine key events on both an Australian and international level. There will be an emphasis on the analytical, interpretative and evaluative writing skills which are so necessary for success in the contemporary world. Building upon the knowledge and skills established in Years 7 and 8 HASS, each student will complete Year 9 units on:

- a. Making a Better World – Movement of Peoples (1750 -1918)
- b. Long and short term causes of World War One, its course and outcomes.
- c. The interwar period and the rise of Nazism
- d. World War Two and propaganda

With the increasing importance of analytical and writing skills in both senior secondary and further education, it is important that all students have the opportunity to develop these abilities. To this end, HASS will be assessed each semester by:

- A research assignment
- An essay exam
- Short response / response to stimulus examinations.

Humanities and Social Sciences provides a solid foundation for many senior subjects, in particular the social sciences of Ancient History, Modern History, Geography and Study of Religion.

Faculty of Arts

DRAMA

(Elective Subject)

Through engaging in Drama, students not only develop key personal attributes such as confidence, public speaking, the ability to work in groups, creativity, determination and self-drive but boost their cognitive memory skills and learn to step out of their comfort zones.

Drama provides a medium for exploration, social criticism, celebration and entertainment. It enables students to define and shape their own identity within our social and cultural contexts. By blending intellectual and emotional experiences, Drama offers a unique means of inquiry that contributes to a student's understanding of our world and of the issues they face in their own lives.

The Year 9 Drama course emphasises effective communication and creative expression. During the course, the students will interpret and present published materials as well as write and perform a variety of their own different dramatic pieces. Furthermore, the students attend a wide variety of professional performances and participate in workshops with visiting master artists, actors and theatre practitioners.

The Year 9 Drama Course

Improvisation - Students explore the Elements of Drama through improvisation and the study of script extracts. This extends their communication skills and their ability to interpret social interaction, thus enhancing their social intelligence.

Realism - Students study Theatre History and the acting style of Realism. They explore texts and develop their abilities to interpret and perform characters. Students interpret, manipulate and realise dramatic action through the process of "Method Acting".

Greek and Physical Theatre – Through the exploration of movement, mask and mime students study a classic Greek play. They experiment with non-verbal forms of communicating stories to realise contemporary dramatic meaning and style from an inherited text.

Comedy– The study of comedy allows students the opportunity to comment on the social and political climate of their world through farce and satire. They organise, sequence and create an original piece of theatre, while analysing and manipulating the dramatic elements and conventions.

MUSIC

(Elective Subject)

Music is a vibrant learning community where you will explore and respond to music from a range of culture, times and places. Develop your practice and skills in composing and performing music from many genres, for many purposes. Work collaboratively with peers and teachers. Studying music can lead to careers in creative industries, public relations, arts administration, communication and science and technology.

More and more workplaces and organisations value creativity and diversity in their employees.

Music processes and practices will help you develop transferable 21st century skills such as: creative and critical thinking, collaboration, ICT skills, social/personal skills and communication.

You do not have to be learning an instrument. All students can select music, we will support you in developing the skills you need to be successful.

In Year 9, our focus is on the connection between the aural and visual modes of conveying meaning.

Through the study of Music, students have the opportunity to:

- Develop critical thinking and problem-solving skills
- Develop effective communication skills
- Collaborate with others and consider diverse perspectives
- Engage in creative processes
- Gain cultural awareness
- Become productive users of technology
- Experiment with ideas, explore and experience through inquiry processes

Topics explored in Year 9 Music can include:

Video Game Music

An exciting area of contemporary music. The music in video games is designed to motivate players. Learn how to set the mood and the tone of the game through the manipulation of the music elements.

Put it Together

Explore presenting and performing music. Plan, rehearse and perform demonstrating your understanding of a chosen style of music.

Hero or Villain?

Analyze how a film composer creates the theme for their Villain or Hero. Perform a piece of music from Film in a small ensemble. Apply your understanding to create your own superhero or supervillain theme.

ART AND FILM

(Elective Subject)

Our Art & Film course for Year 9 offers students a breadth of experiences that include Photography, Animation, Skate Deck Design, Painting and Drawing Skills. Students should consider this option if they have an interest in Art, Animation, Photography, Film and Television or Creative Industry.

Students may then go on to further study:

- Visual Art as a general subject in Years 11 and 12
- Visual Art in Practice as an applied subject
- Film, Television and New Media as a general subject in Years 11 and 12
- Cert III in Screen Media

Art & Film prepares young people for a future in the workforce by requiring them to learn technical skills, seek creative solutions to complex design problems, think divergently and develop individualised style. At a time when creativity is sought by industry, Art significantly contributes to the design and manufacture of images and objects. Through the study of Art & Film students have the opportunity to:

- Develop creativity, imagination, and problem-solving skills
- Work as individuals and cooperatively
- Meet and learn from visiting industry professionals
- Learn to be self-driven
- Have the freedom to choose their own projects and areas of study
- Acquire digital skills and techniques
- Acquire physical skills and techniques
- Develop appreciation of the value of art and creative industries
- Be inclusive and appreciative of multiple perspectives or points of view
- Gain knowledge of art and film theory

Students exhibit their works in the annual Iona College exhibition, the *Iona Art & Film Project*, in Term 3 and are encouraged to enter local competitions. Excursions to the Queensland Art Gallery and the Gallery of Modern Art are regularly included in our programs. Industry professionals are also invited to the college to conduct workshops and share their unique ways of working with the students.

Various assessment techniques are used including: individual practical activities involving development and application of skills or processes, journals, written research projects and verbal communication techniques. Homework is set and assessed as needed. Students will be expected to complete some work on assessment outside of class time, such as developing ideas, completing designs and individual practice. There are both practical and theoretical components for each task completed. The theory component of the course is 'related theory' and links to the practical work being produced.

Faculty of Commerce

COMMERCE

(Elective Subject)

The purpose of Commerce is to guide students toward personal competence and responsible participation in society. In doing this it provides a distinctive and significant contribution to the total school curriculum and thereby the general education of students.

As participants in the commercial environment, individuals assume various roles such as consumer, producer, worker, owner, manager and taxpayer. A study of Commerce therefore aims to develop an understanding of Australia's changing business and economic environment to support their responsible participation in society. It should also provide a means whereby young people are made aware of the forces of change, including changes in politics, information technology, the law, the economy and the environment.

Topics covered in the year 9 course are as follows:

- Needs, Wants and Money
- Personal Finance
- Marketing and Advertising
- International Business

A variety of assessment techniques will be used including short answer examinations, essays, research assignments and class presentations. Assessment in Commerce will be based on cognition, focusing on the skills of Knowledge, Understanding, Interpretation and Evaluation, and Communication and Presentation.

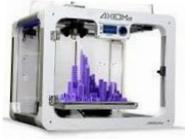
Amongst the many learning opportunities, students will be required to develop and present a marketing and business plan. Using computer technology and relevant software is integral to the study of Commerce.

Whilst Commerce is a separate and distinct subject, the complexity of the commercial environment means that a course in Commerce will have links across the school curriculum. Accordingly, plays a complementary and interdependent role within the total curriculum, drawing upon and contributing towards other subject areas. Though it is not a pre-requisite, a study of Commerce should give students an introduction to concepts covered in their senior studies of Accounting, Business, Economics and Legal Studies.

Faculty of Design and Innovation

DESIGN

(Elective Subject)



In Design, students interact with new technologies such as laser cutting/engraving, 3D printing, CNC milling, and more. The course is structured to expose students to the range of digital and physical tools used in the Design fields and to provide the underlaying skills to select the right process for their desired outcome in future projects. Design is focused majorly on divergent and convergent thinking strategies where students will be challenged to solve aspects of real world problems in controlled or specific environment by considering and exploring many potential solutions. This course includes some practical work at times to realise design solutions in the form of prototyping, modelling, and in some casing production of quality products.

Students undertaking Design will:

- Consider many factors when approaching design problems
- Focusing on the needs of the end user and/or clients with empathy
- Think inside and outside ‘the box’ when devising solutions
- Work with emerging technologies
- Analysing new opportunities
- Experience entrepreneurial skills
- Prototype, iterate, and model solutions
- Develop and use sketching and digital modelling skills
- Explore Divergent and Convergent thinking strategies
- Consider sustainability factors
- Evaluating products and processes

Pathways

Learned elements in Design will be developed further in Design (General Subject) and Industrial Graphics (Applied Subject).

Design occupations can include:

Industrial designer	Other Creative Industries	Draftsperson
Interior design	Landscape Architect	Industrial Engineer
Graphic Designer	Building Architect	Civil Engineer
Digital Designer	Other Architectural Fields	Other Engineering field

INDUSTRIAL TECHNOLOGY

(Elective Subject)



In Industrial Technology, students explore the role of manufacturing fields in modern society from a range of perspectives. The course is designed to offer students a high level of practical work, workshop skills, some design elements, and problem-solving tasks.

Students undertaking Industrial Technology will gain experience in:

- Making products to specifications and standards
- Applying techniques to manipulate resistive materials in production
- Using a wide range of hand tools for wood and metal
- Using a wide range of portable power tools such as drills, drivers, and trimmers
- Using a wide range of fix machinery
- Focusing on safe operation and appropriate uses

Pathways

Learned elements in Industrial Technology will be developed further in Industrial Technology Skills (Applied), Engineering Skills (Applied) and Building and Construction Skills (Applied).

Industrial Technology occupations can include:

Boiler Maker	Plumber	Building technician
Machinist	Tiler	Forman
Fitter and Turner	Painter	Draftsperson
Sheet metal Fabricator	Plasterer	Mechanic
Other Metal Trades	Other Building Trades	Engineer
Carpenter	Technology teacher	

AEROSPACE

(Elective Subject)

The purpose of Aerospace is to guide students towards an understanding of the aviation and aerospace industries, whose development has been one of the most exciting and challenging adventures in human history. As a very practical and 'hands-on' subject, students who study



Aerospace will build remote-controlled aircraft in addition to studying basic aeronautical knowledge. There will be an ongoing focus on drones, the business of aviation and developments in military aircraft. Students will use aircraft simulators to model flight, as well as gaining an understanding of the importance of safety and regulation in the aviation industries.

In a single lifetime the technology of powered flight has progressed from a faltering hop of a few metres to giant machines efficiently carrying hundreds of passengers and cargo, non-stop half way around the planet. Major aircraft manufacturers forecast massively increased demand for air travel in the Asia-Pacific region in the years to 2025. Today, military aircraft routinely conduct missions with pinpoint accuracy, often at supersonic speeds. Satellite technology facilitates instant global communication, and the Earth and the rest of the universe are being surveyed in ever-increasing detail. Men have visited the Moon and a permanently inhabited space station is now a reality.

Additionally, this course will encompass a study/overview of the following key elements:

- Introduction to the aircraft maintenance/construction industry
- Safety in the aircraft industry workplace
- Basic aerodynamics, aeroplane aerodynamics and flight controls
- Use of hand and power tools in the construction of miniature/model aircraft
- Maintenance practices
- Basic aircraft hardware
- Basic aeroplane structures and aircraft materials
- Propulsion systems
- Basic electricals and electronics

A variety of assessment techniques will be used including objective/short answer examinations, essays, reports, research assignments and oral presentations.

While Aerospace is a separate and distinct subject, the complexity of the aviation, commercial, computing and engineering environment means that a course in Aerospace will have broad links across the school curriculum. Accordingly, it may play a complementary and interdependent role within the total curriculum, drawing upon and contributing towards other subject areas. Though it is not a pre-requisite, a study of Aerospace should give students an introduction to concepts covered in their senior studies of Aerospace Systems.

DIGITAL TECHNOLOGIES

(Elective Subject)

Digital Technologies aims to teach students how to use technology effectively to present information, solve problems, develop solutions and entertain. Over the two-year course, students learn how to use a variety of computer-based applications and develop skills and understanding of the role Digital Technology plays in society. Information Technology is a significant part of modern society and there is an expectation that students will have effective IT skills.

All units explore the technology and the role that the technology plays in society. Students will be able to apply their technology skills to other subjects such as Art and Film, Religion, English and Humanities and Social Sciences. The course covers a broad range of skills and software so students choosing not to study Digital Solutions in Years 11 and 12 have sufficiently developed skills and knowledge to use IT successfully in the future.

Year 9 Computing is a full year subject that looks at a range of technology literacy skills in a variety of contexts. The course covers Ethics, Robotics, Software Design and Creative Technologies. The core Office Skills will be developed within these contexts, helping students maximise their use of Word, Excel, PowerPoint, Access and the integrating of software packages. Students are taught a range of skills in document presentation, including columns and tables, tabs and tab stops, headers and footers, margins, page borders, customising toolbars, text boxes and frames, bullets and numbering. These skills are used in the presentation of their assignments.

Digital Design: Students will use a software development environment to construct a project. Skills include design and development, variable choice, sequencing, and understanding programming constraints. This is a more challenging unit for the students as it involves using a range of coding techniques, exploring design issues and problem solving. Students will also use word processing software to produce written documentation to support their finished product.

Digital Systems: Students learn the properties of different computer hardware; learn networking infrastructure and data storage principles.

Algorithms and Programming: Students learn the role of algorithms in software development. They begin to learn pseudo-code in order to create solutions to real world problems. They learn how to propose ideas and support their concepts with evidence through multi-modal presentations. Students will also begin to learn Python.

Robot Rescue: Students design, build and program LEGO Mindstorm robots that follow a randomly designed path to a rescue zone, and then locate and rescue a simulated victim. This unit uses a range of technology skills and enables students to solve real-world problems in a safe, small-scale environment. In Industrial Technology, students explore the role of the industrial technology fields in modern society from a range of perspectives. The course is designed to offer students a high level of practical work, workshop skills, some design elements, and problem-solving tasks.

Faculty of English and Languages

ENGLISH

(Core Subject)

The aim of English in Year 9 is to help students engage imaginatively and critically with literature, language use and literacy practices. Students become confident, effective and critical users of texts and language by learning to make meanings in texts, operating language systems, and evaluating and reconstructing meanings in texts in English. This can generate an appreciation and enjoyment of texts and language, an interest in learning about the world, and an ability to make judgments about and accept or challenge meanings in texts. English is also the basis for learning in all other spheres and is therefore undertaken by all the students at the College.

COURSE OUTLINE

In Year 9, English is divided into thematic units of work, each with a clearly defined focus. Units offered include:

Year 9:

- The Oasis – an investigation into social issues, including homelessness, in texts;
- Cops, Spies and Private Eyes – analysis of crime and mystery texts (novels, poems, short stories, television programs and films)
- Stop Laughing, this is Serious - a look at humorous texts including poetry, short stories and film;
- Some are More Equal than Others – a novel study looking at power struggles in relationships.

ASSESSMENT

Assessment is continuous, with a range and balance of tasks undertaken at various times and under varying conditions. Assessment techniques may include:

- expository or analytical essays
- persuasive speeches
- feature articles
- film analyses
- presentations (with supporting technologies)
- narratives or short stories

Students will be awarded a level of achievement based on their results for all pieces of assessment over the semester.

JAPANESE

(Elective Subject)

The study of another language and culture widens horizons, extends communicative competence and deepens intercultural understanding, enabling language learners to successfully take their place as global citizens. Learning another language:

- fosters an appreciation of cultural diversity which is especially important in our increasingly multicultural Australian society;
- deepens a student's understanding and knowledge of the nature, purposes and styles of language, contributing positively to the study of the subject of English; • develops cognitive flexibility and problem solving ability;
- enhances career prospects.

Furthermore, research indicates that the study of another language early in life (ie before the end of adolescence) facilitates successful acquisition of another language later in adult life.

The study of Japanese is particularly relevant as Australia's political, economic, education and trade links ensure that Queenslanders are increasingly coming into contact with Japanese business people, tourists, students and residents.

The Year 9 Japanese course builds on the introductory Year 8 course and consolidates and further develops the Comprehending skills of Listening and Reading and the Composing skills of Speaking and Writing. Therefore, it is highly desirable that anyone wishing to continue with Japanese studies in Year 9 (and beyond) should have achieved a sound level (C) or better in Year 8 Japanese, with strong Hiragana recognition skills. In Year 9, students are introduced to the script of Katakana. Therefore, students are required to be independent learners and expected to demonstrate a strong understanding of both Hiragana and Katakana by the end of Semester 1. Successful completion of the Year 9 and 10 Japanese course is a pre-requisite to Senior Japanese.

Topics tackled through learning experiences and various activities in the four macro skills include units such as:

- Me, Myself & Mine - Personal identification, family, friends & pen-pals, talents & abilities, emails to exchange students / potential host families
- It's My Life – Likes and dislikes, daily routine, hobbies & pastimes, week-ends & holidays, school life, TV, 'manga' and 'famikon' (X-box, Nintendo & PS2)
- Going Out – Movies, shopping (dollars & yen), mates, dates, 'makkas', pocket money, trips & school excursions
- The Good, The Bad & The Beautiful – Famous & infamous people, Australian sporting legends, movie stars, singers & bands, 'Guess Who' & 'Celebrity Heads'
- Let's Party! – Celebrations, birthdays, Christmas, festivals, presents & souvenirs, Sayoonara Party!

Assessment: The macro skills are tested separately once or twice per semester. There are no assignments.

Students will also have the opportunity to participate in cultural activities, excursions (such as dinners, cultural performances and immersion days) and cultural exchanges, as a visitor to Japan and/or as a host to Japanese students visiting Australia.

Faculty of Mathematics

MATHEMATICS

(Core Subject)

In Year 9 all students study Mathematics. While most students undertake the regular course, special programs exist for gifted mathematicians and those who struggle with Mathematics.

The goals of the Year 9 Mathematics courses are twofold. Students are to acquire and consolidate basic arithmetic and mathematical skills and will be introduced to computational technology (scientific and graphics calculators). As well, these courses aim to promote thinking skills and these enhance the student's capacity to analyse and solve problems in a variety of areas.

This course covers the content strands of 'Number and Algebra', 'Measurement and Geometry' and 'Statistics and Probability'. The ideas are consolidated through exercises from the textbook and through weekly homework sheets.

Assessment is based on formal exams, one with a calculator and one without, conducted at the end of each term. There are also some opportunities throughout Years 9 & 10 for alternative assessment in the form of problem solving and modelling tasks. The assessment covers the proficiency strands of 'Understanding', 'Fluency', 'Problem Solving' and 'Reasoning' which are broken up into simple familiar, complex familiar and complex unfamiliar type questions.

First term in Year 9 will be a probation period. If students are unable to demonstrate vital personal habits as listed above, and the capacity to deal with work at this level, they will be required to choose another elective.

Students who achieve outstanding results in Enrichment Mathematics may be given the opportunity to pursue an accelerated pathway. This means starting their mathematical senior studies in Year 10 with the Year 11 cohort. If this were the case, further discussions would occur with the student, the students' parents/caregivers and necessary teaching staff.

Faculty of Science and Health

SCIENCE

(Core Subject)

Science in Year 9 follows the guidelines of the Australian Curriculum by providing students opportunities to develop an understanding of important scientific concepts and processes, the practices used to develop scientific knowledge, of science's contribution to our culture and society, and its applications in our lives. Science has three interrelated strands: Science Understanding, Science as a Human Endeavour and Science Inquiry Skills.

Science Understanding refers to the concepts, facts, principles, laws, theories and models that have been established by scientists over time. There are four sub-strands: Biological sciences, Chemical sciences, Earth and Space sciences and Physical sciences.

Science as a Human Endeavour highlights the development of science as a unique way of knowing and doing, and the role of science in contemporary decision making and problem solving. There are two subunits: Nature and Development of Science (which aims to develop an appreciation of the unique nature of science and how current knowledge has developed over time) and Use and Influence of Sciences (which explores how science has affected peoples' lives and how science is influenced by society).

Science Inquiry Skills involves identifying and posing questions; planning, conducting and reflecting on investigations; processing, analysing and interpreting evidence; and communicating findings. This strand is concerned with evaluating claims, investigating ideas, solving problems, drawing valid conclusions and developing evidence-based arguments.

Assessment is continuous throughout the course and assessment items include practical reports, research assignments, reports, essays, presentations and formal examinations.

SCIENCE, TECHNOLOGY, ENGINEERING AND MATHS (STEM)

(Elective Subject)

STEM is an elective course offered to students who have a passion and talent in the curriculum areas of science, technology and mathematics. The course is independent of current ACARA courses, and it primarily focuses on inquiry-based learning to develop understanding and skills within a range of topics that are both relevant to the four primary areas of STEM; science, technology, engineering and maths. Topics are both contextualised and multi-disciplinary. They include:

- Communication Technology
- Engineering Technology
- Astrophysics and Rocketry
- Forensic Science
- Computer Programming
- Biomedical Sciences
- Alternative Energies
- Applied Mathematics

This course is designed for the highly motivated student, who needs to be proficient at working productively in both collaborative and independent environments. STEM provides an excellent opportunity to develop higher order cognitive skills required for future success in higher studies leading into a range of careers. Students are required to have a minimum grade of a B in both Year 8 Science and Maths. In addition to this, it will be an advantage to possess the following important skills:

- Problem solvers
- Collaborative workers
- Innovative
- Logical thinker
- Technological literate
- Self-reliant.

MARINE STUDIES

(Elective subject)

An essential aspect of Science is to allow students to develop a better understanding of the world in which we live. Students at Iona College are very fortunate to have Moreton Bay as their very own backyard. From the sand islands of Moreton and Stradbroke islands that border the bay through to the mangrove communities that hug its shoreline, Moreton Bay is home to an array of unique and fragile ecosystems that are at risk due to Brisbane's significant population growth.

The Marine Studies course is designed to cater for those students who possess a passion towards preserving the beauty and ecology of Moreton Bay. Students would be required to have a minimum grade of a C in Year 8 Science. The College's location allows students regular access to the bay. An important aspect of the course is to build connections with current university and community projects in the hope that the College itself develops its own identity as a part of the ongoing pursuit to conserve the bay. Students would be involved in field studies, gathering firsthand data to better analyse the health and conditions of the bay.

Outline

Throughout the course students will study four important aspects of Marine Studies.

- **Marine Ecology:** Students are introduced to the enormous biodiversity that exists in Moreton Bay in order to gain a better understanding of the important relationships that exist through interactions of these organisms and their environment. It is also the impact that human interactions play in the delicate balance of these relationships.
- **Oceanography:** Students explore the important geological features that shape the coastline and influence the distribution of organisms within the bay. It is important to develop an awareness of the roles human activities have in shaping the bay. Examples might be the impact of expanding the Port of Brisbane or the effect urban developments such as canal development have on the natural landscape.
- **Conservation and Sustainability:** Gathering and interpreting data from marine environments can determine the effects of humans and help guide sustainable resource management decisions. Students will explore the various aquaculture, ecotourism, recreational and commercial influences on the bay.
- **Marine Research Skills:** An essential aspect of the course is the inquiry focus that requires students to develop marine research skills to gather data and undertake investigations. Skills range from reading weather charts, recognising dangerous hazards through to develop essential skills in water safety.

PHYSICAL EDUCATION

(Elective Subject)

This elective prepares boys for Physical Education in Year 11 and 12 and offers the opportunity to develop their knowledge of the theory of the new syllabus. The course comprises both project based and practical activity to allow pupils to learn in three dimensions; about, through and in movement contexts.

UNITS STUDIED:

Semester 1 – Tactical Awareness

Recognise and explain the two major approaches to investigate motor learning. Examine attacking and defensive strategies and analyse the implementation within a game. This would be integrated with Badminton and Volleyball.

Type of assessment – Project Folio. 50% of the overall grade.

Semester 2 – Psychology in Sport

Recognise and explain how sports psychology aims to optimise performance through the application of knowledge and strategies. This would be integrated with Golf and Touch Football.

Type of assessment - Investigation Report. 50% of overall grade.