



# MATHEMATICS

## (Core study)

Mathematics is an area of knowledge older than recorded history and has, through the ages, developed into a sophisticated, complex body of knowledge. It has applications in all human activities, crossing cultural and linguistic boundaries to provide a universal way of solving problems in areas such as science, engineering, technology, commerce, business, art, crafts and many everyday activities.

Through learning mathematics in school, students will work towards achieving the following goals:

- acquire mathematical skills and knowledge so that they can deal confidently and competently with daily life;
- develop knowledge and skills in using mathematics for employment, further study and interest;
- be able to interpret and communicate quantitative and logical ideas accurately;
- recognise the fundamental importance of mathematics to the functioning of society;
- understand and appreciate the nature of mathematical thinking, the processes by which mathematics changes and its cultural role;
- understand the dynamic role of mathematics in social and technological change;
- use technology appropriately and effectively to support the learning of mathematics, and in carrying out mathematical activities in context.

The structure of the Mathematics units offered at Year 10 level at Catholic College Sale is designed to provide for different levels of abilities and interests. For example, students who are competent and confident with their mathematics may choose to undertake Enhanced Mathematics, whereas students who are maybe less confident and require reinforcement of basic skills will probably undertake Mainstream Mathematics.

**Prior to making a decision with regard to the level of mathematics to pursue, students should discuss the matter carefully with their current Mathematics teacher.**

Students will generally have the option to move to another level. This could occur at the end of a semester if it is felt to be in the student's best interest. This may possibly also occur early in a unit if a student has chosen a unit which does not truly reflect the student's ability or interests.

**Students intending to study VCE Mathematical Methods at Units 1 & 2 and/or Units 3 & 4 level must have studied Enhanced Mathematics at least at Year 10 level. Mainstream Mathematics does not provide a sufficient study of algebra to enable successful undertaking of VCE Mathematical Methods.**

### Year 10 Mathematic Units offered:

UNIT TITLE:	ESSENTIAL MATHEMATICS UNIT 3	UNIT Code:	MAES01 - Semester 1
UNIT TITLE:	ESSENTIAL MATHEMATICS UNIT 4	UNIT Code:	MAES02 – Semester 2

- This course has been designed for students who have experienced difficulties mastering basic concepts covered in Mathematics in previous year and who require extra reinforcement and practice with their basic mathematical knowledge and skills.
- Students will **need to be recommended by a teacher** to undertake this course where there is a deficiency in knowledge and skills in the basics of their mathematics learning.
- Students who have not mastered many of the skills and concepts will be encouraged to work towards consolidation in some or all of the areas of number (arithmetic), space, measurement, chance and data, and working mathematically. These Essential Mathematics units have been designed in line with the Victorian Essential learning Standards for Mathematics (VELS) at Level 6.
- Students will generally continue their study of mathematics with VCAL Numeracy units rather than VCE Mathematics units, although there is the possibility of enrolment in VCE Foundation Mathematics Units 1 and 2 if sufficient progress has been made by the student.

UNIT TITLE:	MAINSTREAM MATHEMATICS UNIT 3	UNIT Code:	MAMM01 – Semester 1
UNIT TITLE:	MAINSTREAM MATHEMATICS UNIT 4	UNIT Code:	MAMM02 – Semester 2

**Pre requisite:** Successful completion of Year 9 Mathematics

- This course has been designed for students who may not have completely mastered all of the concepts covered in Year 9 Mathematics, especially in the area of algebra.

- Students realise the importance of mathematics and will continue to work towards mastering the skills and concepts in space, number (arithmetic), measurement, chance and data, structure (algebra), and working mathematically. These Mainstream Mathematics units have been designed in line with the Victorian Essential Learning Standards for Mathematics (VELS) at Level 6 and are designed to cater for students of all abilities. There will not be such a large emphasis on algebra as in Enhanced Mathematics.
- Students will be looking to study mathematics at VCE level, namely General Mathematics Units 1 and 2 and Further Mathematics Units 3 and 4. This course is appropriate for those students who intend to follow a tertiary course or further study which does not involve a (major) study in mathematics. Alternatively, students may choose to study VCAL Numeracy Skills at Intermediate and Senior levels. These units provide reinforcement of basic skills and applications in practical and real-life situations.

**UNIT TITLE: ENHANCED MATHEMATICS UNIT 3**  
**UNIT TITLE: ENHANCED MATHEMATICS UNIT 4**

**UNIT Code: MAEH01 – Semester 1**  
**UNIT Code: MAEH02 – Semester 2**

**Pre requisite:** Successful completion of Year 9 Mathematics

- This course has been designed for students who have mastered most of the concepts covered in Year 9 Mathematics, especially in the area of algebra.
- Students realise the importance of mathematics and will continue to work hard towards mastering the skills and concepts in space, number (arithmetic), measurement, chance and data, structure (algebra), and working mathematically. These Enhanced Mathematics units have been designed in line with the Victorian Essential Learning Standards for Mathematics (VELS) at Level 6 and are designed to cater for motivated mathematics students.
- There will be continued emphasis on developing student's competence in algebra and graphing, as well as applications of mathematics in non-routine situations. There will also be an opportunity for students to undertake extension work with possible acceleration into VCE level material.
- Students will be looking to study mathematics at VCE level, namely some or all of Mathematical Methods Units 1 and 2, General Mathematics (Advanced) Unit1, Mathematical Methods Units 3 and 4, Further Mathematics Units 3 and 4 and Specialist Mathematics Units 3 and 4. This course is appropriate for those students who intend to follow a tertiary course or further study which involves a (major) study in mathematics, such as engineering, physical and chemical sciences, commerce and accounting.

## **PHYSICAL EDUCATION & HEALTH**

Students are required to complete PE/Health in either semester 1 (Human Movement 3) or 2 (Human Movement 4) of Year 10. Year 10 students completing VCE Physical Education Units 1 and 2 are exempt from the Human Movement requirement. Studies in the Health and Physical Education area promote understanding of physical activity and movement, food and nutrition, health, safety, human development and human relations. Within this context the area examines personal action, beliefs, attitudes and values held by families, cultural groups and the wider community; public policies affecting health and physical activity; and the settings and contexts of activities in the area. Each of the PE Human Movement units comprise of a practical **Physical Education component** and a theory or **Personal Development component**. The Physical Education component promotes an understanding of human movement and physical activity, including the development of sports skills and an understanding of origins and rules of various sports including codes of behaviour. Students must **participate in 75%** of these practical sessions and wear correct uniform, which is a requirement. Below is a grid showing the practical and theory components of Human Movement.

**UNIT TITLE: HUMAN MOVEMENT 3**  
**UNIT Code: PEHM3 01**

### **Human Movement 3**

<b>Theory component</b>	<b>Practical Component</b>
1. Fitness (Ch 2)	1. Fitness – testing, etc
2. Nutrition	2. Sofcrosse
3. Community Health (Ch 3)	3. Table Tennis
	4. Soccer

**UNIT TITLE: HUMAN MOVEMENT 4**  
**UNIT Code: PEHM4 02**

<b>Theory Component</b>	<b>Practical Component</b>
1. Skill acquisition/ analysis, biomechanics, etc (Ch 1)	1. Rhythm & Movement
2. Driver Education (Risk Taking) & Community Recreation & Leisure	2. Squash
3. SEPEP	3. Korfball/European Handball
	4. Recreation – golf, fishing, etc

**UNIT TITLE: OUTDOOR EDUCATION**  
**Unit Code: PEOE 01/02**

**Semester offered: 1 or 2**

This course is an introduction to basic outdoor skills and is designed to complement VCE Outdoor Education. It is not PE/Health and does not replace the requirements of a student in Year 10 completing Human Movement. There is a theory component of up to 70% of the coursework and a number of practical activities. The unit incorporates a compulsory expedition. This trip involves participating in bushwalking and an outdoor activity whilst spending 2 nights camping.

**Excursion Cost: Covers hire of outdoor equipment and bus fees throughout - \$115**

## ARTS & TECHNOLOGY

This learning area encompasses both the Arts and Technology.

**The Arts** are a fundamental means of expression and communication in all societies. Through 'The Arts' we gain a sense of our social and individual identity. Study in the Arts gives students access to the cultural diversity in their immediate community and the broader Australian and international context. They learn to recognise and value the cultural forms and traditions that constitute artistic heritage. Students also learn ways of experiencing, developing, representing and understanding ideas and emotions. They learn to be imaginative, explore alternative solutions and share opinions.

**Subjects included under the learning area of the ARTS are Art & Drama.**

**Technology** is a term that refers to the equipment and processes people use to enhance, maintain, manipulate and modify the environment and resources to support human endeavour. It involves the purposeful application of knowledge, skills, equipment, materials and information to create useful products.

People come into daily contact with a wide variety of both simple and complex technologies - in the home and workplace, through health services, transport and communication, and in leisure activities. Technology contributes to cultural, social, environmental and economic changes. Technological developments can affect all aspects of people's lives. They can change such things as the nature and place of work, the skills needed to perform tasks, the availability of information, and the way we learn.

**Subjects included under the learning area of TECHNOLOGY are Food Technology and Design Creativity and Technology (Materials).**

### **ART**

**UNIT TITLE: ART (Including Painting and Drawing)**  
**Unit Code: ATAR01/02**

**Semester Offered: 1 or 2**

#### Why study Art?

There is ample evidence that art helps students develop the attitudes, characteristics, and intellectual skills required to participate effectively in today's society and economy. Art teaches self-discipline, reinforces self-esteem, and fosters the thinking skills and creativity so valued in the workplace. It teaches the importance of

teamwork and cooperation. The art program enhances cognitive development, social skills, self-esteem, and interest in learning while broadening understanding of all subject matter.

Descriptor

Students who choose this unit will work in a creative environment, as part of an enthusiastic group. They will be encouraged to extend and build upon their skills using a wide variety of materials and techniques, in drawing, sketching, mixed media, print-making and the use of technology (digital cameras and computer software for the scanning and manipulation of images). The ability to generate your own ideas for art works is encouraged, and you may choose to work in any of the media available to you.

All students will be encouraged to develop their own individual way of working, and some may be interested in taking the option to work with more challenging material and ideas, to further enhance their skills. Your folio of creatively presented work will be assessed at the end of the unit. This unit provides Year 10 students with enhanced knowledge and skills in drawing and painting and is an important introduction to VCE ART units 1 – 4.

**DRAMA**

**UNIT TITLE: DRAMA**

**Unit Code: ATDR01/02**

**Semester offered: 1 or 2**

Why study Drama?

Drama provides training in the creative and technical skills associated with theatre: acting, dance, design, directing, mime, physical theatre, stage management, theatre administration and voice. On a personal level, drama also encourages growth, self-esteem and confidence by developing communication, interpersonal and collaborative skills – essential life-skills for all careers. A study in drama cultivates practices that are artistic, critical and collaborative. These practices lie at the core of the drama curriculum and provide exciting opportunities for future career developments.

Descriptor

Students will have the opportunity to develop acting skills and apply them to both improvised and scripted drama. They explore ways of creating characters with depth and credibility, and how to interact with other characters in scenes and plays. Students will also have the opportunity to develop their knowledge of stagecraft and dramatic elements, theatre history and theatrical conventions. They rehearse and refine their work for particular audiences culminating in the performance of a scripted piece. Students critically analyse and evaluate their own and others' performances. They reflect on the strengths and limitations of their own work and identify ways in which it can be developed and refined.

**Excursions:**

**Local Level**

**Cost: Approximately \$20**

**FOOD**

**UNIT TITLE: CREATIVE CATERING**

**Unit Code: ATFCX1/X2**

**Semester Offered: 1 or 2**

Descriptor

This unit has been designed in line with the VELS level 6. Catering for different occasions enables students to experience and learn many skills in hospitality. Students will cater for a variety of functions according to the needs of the College. This will give students experience in real life situations including planning, preparing and serving food in the appropriate manner.

**DESIGN CREATIVITY AND TECHNOLOGY**

**UNIT TITLE: Design Creativity and Technology – Wood/Metal**

**Unit Code: ATMW01/02**

**Semester offered: 1 or 2**

Why study Design Creativity and Technology Wood / Metal.

This study engages students in technological tasks that call on their knowledge and understanding of materials and production processes to design and make products suitable for their intended purpose. Students also have opportunities to undertake production activities often related to industrial and commercial practices.

Descriptor

Students will prepare a detailed design from a range of ideas and organise production processes to achieve desired outcomes. Designs will show a practical and creative use of materials considering finish and an awareness of environmental requirements. Drawings will include materials lists and production costs.

Students will develop and apply skills in the manipulation and processing of materials to an increased level of precision. Building construction, metal fabrication and welding techniques of ARC, MIG, Oxy and TIG are introduced. A demonstration of safe and responsible work practices will be shown in line with current occupational health and safety requirements.

*This unit provides students with knowledge, skills and attitudes, which will be useful to the home handy-person and will also enhance employment prospects if required. It provides experience in, and knowledge of, a range of occupations in the metalworking and building and construction industry in order that students can make informed choices of career paths. This unit is typically aimed at the Year 10 student as it provides a comprehensive use of a wide range of workshop equipment and practices and is considered an important introduction to the VCE units in Design and Technology – Wood / Metal.*

## **LOTE – (Languages other than English)**

The ability to use a language other than English and move between cultures is important for full participation in the modern world, especially in the context of increasing globalisation and Australia's cultural diversity.

Learning a language offers students the opportunity to:

- Use the language to communicate with its speakers
- Understand how language operates as a system and, through comparison, how other languages, including English, are structured and function
- Gain direct insights into the culture or cultures which give the language its life and meaning
- Consider their own culture, and compare it with the cultures of countries and communities where the language is spoken
- Add to their general knowledge
- Enhance their vocational prospects

**UNIT TITLE: FRENCH - LIFESTYLES / OPINIONS**

**UNIT Code: LOFR 01**

**Semester Offered: 1**

**Pre requisite:** Successful completion of Year 9 French

This unit offers the students the opportunity to learn more about Paris and its surroundings. They discover the every day life of young French people, making comparisons between French and Australian lifestyles. Areas covered include transport, travelling and relationships. Students develop their language, learning to give opinions and make decisions.

**UNIT TITLE: FRENCH - THE FUTURE**

**UNIT CODE: LOFR 02**

**Semester Offered: 2**

**Pre requisite:** Successful completion of Semester 1, Year 10 French

This unit offers the students the opportunity to learn more about what the future might hold, with an emphasis on the environment. Students will develop their discussion skills in practical situations. Areas covered include technology, employment and environment.

## **SCIENCE**

Science and its applications are part of everyday life. Science education develops students' abilities to ask questions and find answers about the natural and physical world. It provides students with insights into the way science is applied and how scientists work in the community, and it helps them to make informed decisions about scientific issues, careers and further study. Building students' science capability is also critical to help them develop the skills and understanding necessary to meet these challenges of the 21<sup>st</sup> century.

The structure of the Biology, Physics and Chemistry science units offered at Year 10 complies with VELs in the science domain, preparing students for VCE study in these areas. The Science and Society unit is designed for students who do not need prerequisite subjects for VCE.

**UNIT TITLE: BIOLOGY**  
**UNIT CODE: SCBI 01/02**

**Semester offered:** 1 and/or 2

**Pre requisite:** Satisfactory completion of Year 9 Science

**It is recommended that students who may intend to do VCE Biology undertake this course.**

Are you interested in living things in the world around you? Then Biology is for you. Hands on activities in genetics examine the process of heredity and look at how our genes make us what we are. We also investigate what can go wrong when our genes are not working properly. We look at diseases and how they affect our body and what the body does to fight the invasion. We consider how disease affects society and what can be done to stop the spread of new and dangerous diseases. Finally a brief tour through evolution describes how and why animals have adapted and changed over the ages and just how do biologists sort out all the plants and animals on the planet? We look at the process of extinctions and how humans have evolved to apparently dominate the planet.

Excursion \$30

**UNIT TITLE: CHEMISTRY**  
**UNIT CODE: SCCH 01/02**

**Semester offered:** 1 and/or 2

**Pre requisite:** Satisfactory completion of Year 9 Science

**It is recommended that students who may intend to do VCE Chemistry undertake this course.**

“Why is this so?” A critical question which underpins the study of Chemistry at all levels. This unit will begin to provide answers to this question and also provides a critical foundation for further study in VCE Chemistry. It explores the nature of the ‘invisible’ sub-atomic world and starts to explain how all matter is composed. Practical experiments and investigations are conducted to discover how chemical reactions occur and how the properties of different materials are related to their everyday uses. It will develop fundamental skills in representing chemical reactions using equations and an understanding of how elements are organized in the Periodic table.

Excursion \$30

**UNIT TITLE: PHYSICS**  
**UNIT CODE: SCPH 01/02**

**Semester offered:** 1 and/or 2

**Pre requisite:** Satisfactory completion of Year 9 Science

**It is recommended that students who may intend to do VCE Physics undertake this course.**

This unit introduces the study of Physics through exploring the ideas, laws and units associated with the world of energy and motion. Students explore the units of energy and power using the  $E=mc^2$  law. This concept is expanded to develop understanding of use of nuclear energy in the world today, eg. Nuclear power plants. Students will investigate electrical energy through constructing and soldering electronic models and gain insight into ‘power’ by building an electric bell and electric motor. Sound, light and heat are investigated by looking at the physics of the human body. The unit finishes by looking at the problems and solutions of sending people into space. The major assignment which combines a number of concepts covered in the unit is a project to develop a mouse trap car.

Excursion \$30

**UNIT TITLE: SCIENCE IN SOCIETY**  
**UNIT CODE: SCSS 01/02**

**Semester offered:** 1 and/or 2

**Pre requisite:** Satisfactory completion of Year 9 Science

**It is recommended that students who have a general interest in science undertake this course. It is a combination of forensic science and psychology.**

Science and Society covers the areas of Forensics Science and Psychology. Do you watch CSI or Law and Order and think you have what it takes to crack the case and solve the crime? We use physical, chemical and biological techniques and concepts to isolate evidence connecting suspects  
[www.cc.sale.catholic.edu.au](http://www.cc.sale.catholic.edu.au)

to crimes. Techniques such as fingerprinting, DNA, blood and soil analysis, microscopy, ballistics and hair and fibre investigations make this a very practical unit. We use these skills to solve our very own Murder in the Middle School.

Are you telepathic? Have you ever experienced hypnosis? Are you a mind reader? Students will gain an insight into the study of human psychology. We investigate the brain and the nervous system and study aspects of the mind including personality, memory, sleep and dreams and disorders of the mind. We distinguish between science and pseudo science and students develop their skills in the scientific method, designing their own psychological investigation.

Excursion \$30

## **HUMANITIES**

Humanities is the study of human progress and how people have organised themselves into societies over time. Each unit provides a framework for developing student knowledge of Australian society, environmental studies and the international community. The units assist students to develop knowledge, skills and values that enable them to participate as active and informed citizens in a democratic society and as a part of the global community.

**UNIT TITLE: HISTORY**  
**UNIT CODE: HMHI 01/02**

**Semester offered: 1 and/or 2**

Students will analyse significant events that contributed to Australia's social, political and cultural development. These events include: colonization, the gold rush and the Eureka conflict, the push for Federation and the world wars and their aftermath. A more in depth investigation will surround the impact of colonization on the Aboriginal and Torres Strait Islanders and their battle for civil, political and land rights.

Students will investigate how the past has influenced the future in Australia through developing knowledge and understanding of political movements, conflict in wars, revolts and uprisings, key national events and women's role in a developing nation. They will gain an understanding of key ideologies, influences and developments in technology, medicine, communication and increasing global interconnectedness today.

Excursion: approx \$30 (Melbourne)

**UNIT TITLE: GEOGRAPHY**  
**UNIT CODE: HMGE 01/02**

**Semester offered: 1 and/or 2**

Throughout 2007-08 'Climate Change' was (and is) at the forefront of our country's social and political agenda. It is not a concept that has 'just arrived' on our doorstep. Interactions between humanity and the environment have been occurring for generations leading the climate and natural world to this point and beyond. In this unit you will discover the long-term and short-term changes to the Earth's surface through case studies and fieldwork that investigates the dynamic nature and processes that shape geological environments and natural hazards. You will appreciate the impact of human activity on these environments and identify management strategies to sustain our planet.

Journey to diverse destinations to investigate global patterns of development and determine factors of management and sustainability of resources. Be able to interpret various geographical data and visual sources to infer and predict probable outcomes related to human activity in different locations, both locally and globally.

Excursion & Field Trip: approx \$60 (2 trips)