Biology

The following contains a description of the course we offer to students at St Marys Senior High. It is intended as a guide to help you select your subjects and you should read it carefully.

Please note:

- The details given represent the way that the course is delivered at St Marys Senior High and may involve different choices from the way other schools might operate the same course.
- Classes can only be formed where sufficient students select the particular course. The fact that a course is listed here is not a commitment to run the course in a particular year.
- The arrangements for particular courses are subject to change for a variety of reasons.
- HSC students may elect to take extension courses which we offer in English, French, History, Japanese, Mathematics and Music.

Biology - Course Details			
Units	**Type**	**ATAR**	**Faculty Teaching This Course**
2	Board Developed Course – Examinable at the HSC, marks can be used to count towards an ATAR	A – Counts towards an ATAR with no restrictions	Science

What will I be doing in this course?

The Biology Stage 6 Syllabus explores the diversity of life from a molecular to a biological systems level. The course examines the interactions between living things and the environments in which they live. It explores the application of biology and its significance in finding solutions to health and sustainability issues in a changing world.

- The Year 11 course investigates cellular structure and provides a base for understanding the way in which multicellular organisms transport and absorb nutrients and carry out gas exchange. Exploring variations in the structures and functions of organisms provides an understanding of the effects of the environment on living things and how this leads to biodiversity. Fieldwork is also mandated in Year 11 and is an integral part of the learning process.
- The Year 12 course investigates reproduction, inheritance patterns and the causes of genetic variation in both plants and animals. Applications of this knowledge in biotechnology and various genetic technologies are explored in the light of their uses in the treatment, prevention and control of infectious and non-infectious diseases.
- Biology uses Working Scientifically processes to develop scientific investigative skills. It focuses on developing problem-solving and critical thinking skills in order to understand and

support the natural environment. When Working Scientifically, students are provided with opportunities to design and conduct biological investigations both individually and collaboratively.

- The study of biology, which is often undertaken in interdisciplinary teams, complements the study of other science disciplines and other STEM (Science, Technology, Engineering and Mathematics) related courses. Through the analysis of qualitative and quantitative data, students are encouraged to solve problems and apply knowledge of biological interactions that relate to a variety of fields.

Year 11 Course Structure and Requirements				
		Modules	**Indicative hours**	**Depth studies**
Year 11 course **(120 hours)**	**Working Scientifically Skills**	**Module 1** Cells as the Basis of Life	60	*15 hours in Modules 1–4
		Module 2 Organisation of Living Things		
		Module 3 Biological Diversity	60	
		Module 4 Ecosystem Dynamics		

Year 12 Course Structure and Requirements				
		Module	**Indicative hours**	**Depth studies**
Year 12 course **(120 hours)**	**Working Scientifically Skills**	**Module 5** Heredity	60	*15 hours in Modules 5–8
		Module 6 Genetic Change		
		Module 7 Infectious Disease	60	
		Module 8 Non-infectious Disease and Disorders		

What should I be able to do at the end of the course?

Students will be able to critically appraise information and apply skills in observation, manipulation and experimental design. Students will plan and organise activities, work with others in teams, communicate ideas and information and be able to solve problems relating to key biological concepts.

How will I be assessed in this course?

A minimum of 35 hours of practical work is required to be completed to satisfactory standards in Year 11 and a minimum of 35 hours of practical work is required to be completed to satisfactory standards in Year 12. The skills learnt will be assessed in practical exams.

The Biology course includes 15 hours of in-class work on a depth study in Year 11, and another 15 hours in Year 12. A depth study is any type of investigation/activity that a student completes individually or collaboratively that allows the further development of one or more concepts found within or inspired by the syllabus. It may be one investigation/activity or a series of investigations/activities.

Depth studies provide opportunities for students to pursue their interests in biology, acquire a depth of understanding, and take responsibility for their own learning. Depth studies promote differentiation and engagement, and support all forms of assessment, including assessment for, as and of learning. Depth studies allow for the demonstration of a range of Working Scientifically skills.

A depth study may be, but is not limited to:

- a practical investigation or series of practical investigations and/or a secondary-sourced investigation or series of secondary-sourced investigations
- presentations, research assignments or fieldwork reports
- the extension of concepts found within the course, either qualitatively and/or quantitatively.

How will this course help me in the future?

The course provides the foundation knowledge and skills required to study biology after completing school, and supports participation in a range of careers in biology and related interdisciplinary industries. It is a fundamental discipline that focuses on personal and public health and sustainability issues, and promotes an appreciation for the diversity of life on the Earth and its habitats.

When combined with Physics or Chemistry, Biology provides an entry to careers in medicine, health, science, forestry and ecology. Studied alone the course is useful in planning for careers in food technology, family studies and teaching.

The course is designed for students who have attained a high level of achievement in Science and wish to pursue further study in Science, Technology, Engineering or Mathematics (STEM) based courses offered at the tertiary level.