AUSTRALIAN SCIENCE AND MATHEMATICS SCHOOL

SUBJECT SELECTION FOR YEAR 12, 2015

BIOLOGY

In Biology students investigate and learn about the structure and function of a range of living organisms, how they interact with other living things and with their environment. Students engage in practical investigations and explore contemporary issues in Biology.

Credits: 20 Learning Area: Sciences

CHEMISTRY

The study of Chemistry involves investigating and learning about the properties, uses, means of production, and reactions of natural and processed materials. It also includes a critical study of the social and environmental impact of materials and chemical processes.

Credits: 20 Learning Area: Sciences

ENGLISH COMMUNICATIONS

English Communications focuses on the development of English skills, and in particular the communication process. Students learn to recognise the conventions of different text types and contexts. They consider the role of language in communications between individuals, groups and organisations. By reading, writing, viewing, listening and speaking, and through the use of information and communication technologies, students develop literacy skills in a broad range of contexts.

Credits: 10 or 20 Learning Area: English

ENGLISH STUDIES

In English Studies students read a range of extended texts and a number of shorter texts. They read texts analytically from a range of contexts, including those from the past, contemporary texts, and those from everyday experience. Students focus on the skills and strategies of critical thinking needed to interpret texts. Through a shared and individual study of texts, they have opportunities to exchange and develop ideas, find evidence to support a personal view, and learn to construct logical and convincing arguments.

Credits: 20 Learning Area: English

ENGLISH AS A SECOND LANGUAGE STUDIES

Students examine and analyse texts that they use and respond to in an English-speaking environment for social and academic purposes. They work independently and collaboratively, to solve problems by using contextual clues to predict and confirm the meaning of a text. They learn when and how to use a strategy such as asking questions to monitor their understanding of texts.

Credits: 20 Learning Area: English

GEOGRAPHY

The discipline of geography deals with environmental phenomena and human activities as diverse as natural hazards, landforms, tourism, economic development, agriculture, and urban planning. Through the study of Geography, students develop an understanding of the spatial interrelationships of people, places, and environments. They develop an understanding of how people interact with environments differently in different places and at different times, and of the opportunities, challenges, and constraints of different locations.
GEOLOGY

Students design and conduct geological investigations and gather evidence from fieldwork, experiments, and research. They have the opportunity to engage with the work of practising geologists and join and/or initiate debates about how geology impacts on our own lives, society, and the environment.

MATHEMATICAL METHODS

The study of mathematical methods examines what has happened and what is happening in the world by looking at mathematics as a creative human response to the external environment through the study of contemporary situations and case studies.

MATHEMATICAL STUDIES

Through the study of Mathematical Studies students explore, describe and explain aspects of the world around them in a mathematical way. Students understand fundamental concepts, demonstrate mathematical skills, and apply routine mathematical procedures, making informed and critical use of electronic technology.

MEDIA STUDIES

Media Studies develops students’ media literacy and practical production skills. Actively engaging and interacting with media, while learning to make informed choices, students will discuss and analyse media issues and create their own multimodal products. Working both individually and collaboratively, Media Studies is a great opportunity for students to have a meaningful creative outlet during the rigours of Year 12.

MODERN HISTORY

The study of history gives students the opportunity to make sense of a complex and rapidly changing world by connecting past and present. Through the study of past events, actions, and phenomena students gain an insight into human nature and the ways in which individuals and societies function. Students research and review sources within a framework of inquiry and critical analysis.

PHYSICS

The study of physics offers opportunities for students to understand and appreciate the physical world. This subject requires the investigation and interpretation of phenomena of physics through a study of motion in two dimensions, electricity and magnetism, light and matter, and atoms and nuclei.

PSYCHOLOGY
The study of psychology enables students to understand their own behaviours and the behaviours of others. It has direct relevance to their personal lives. Psychological knowledge can be applied to improve outcomes and the quality of experience in various areas of life, such as education, intimate relationships, child rearing, employment and leisure.

Credits: 10 or 20 Learning Area: Sciences

RESEARCH PROJECT

The Research Project gives students the opportunity to study an area of interest in depth. It allows students to use their creativity and initiative, while developing the research and presentation skills they will need in further study or work. Students will choose a topic of interest—it may be linked to a SACE subject or course, or to a workplace or community context. They will learn and apply research processes and the knowledge and skills specific to their research topic and record their research and evaluate what they have learnt.

The term ‘research’ is used broadly and may include practical or technical investigations, formal research, or exploratory enquiries.

Credits: 10 Learning Area: Cross-disciplinary

SCIENTIFIC STUDIES - AVIATION

Through Scientific Studies students develop knowledge of scientific principles and concepts through their own investigations. They develop the skills and abilities to explain scientific phenomena, and to draw evidence-based conclusions from investigations of science-related issues.

This program in Aviation concerns itself principally with Flight Operations. It covers most of the theory and appropriate applications leading to a private pilot’s license. Topics include aviation units and charts, aerodynamics, aircraft general knowledge, flight operation and performance, flight planning, meteorology, navigation, human factors and other issues. Extended work will be undertaken with radio and navigation systems. Theory will be complemented with appropriate practical resources including an industry standard multi-functional synthetic flight trainer. Through these activities students learn about physics, the environment and society in a practical setting.

There is a special facilities fee of $180 for external students to participate in this course.

Credits: 20 Learning Area: Sciences

SCIENTIFIC STUDIES – HUMAN PERFORMANCE

Through Scientific Studies students develop knowledge of scientific principles and concepts through their own investigations. They develop the skills and abilities to explain scientific phenomena, and to draw evidence-based conclusions from investigations of science-related issues.

This program in Human Performance combines a theoretical and practical study of human movement, health and physical performance. Students gain an understanding of human functioning and physical activity with a focus on bio-mechanics and sport psychology. Students explore their own physical capacities and analyse performance and health issues.

Credits: 10 or 20 Learning Area: Sciences

SPECIALIST MATHEMATICS

Through the study of Specialist Mathematics students gain the insight, understanding, knowledge, and skills to follow pathways that will lead them to become designers and makers of technology. The subject provides pathways into university courses in mathematical sciences, engineering, computer science, physical sciences, and surveying. Students envisaging careers in other related fields, including economics and commerce, may also benefit from studying this subject.

Credits: 20 Learning Area: Mathematics
UNIVERSITY EXTENSION STUDY

University Extension Study gives students the opportunity to undertake a first year university subject as a part of their SACE Stage 2 program. The university subject counts as a “Recognised Study” for SACE completion and for the calculation of an ATAR. Students normally complete two separate semester courses at university. The results for these two courses combined count for a 20 credit subject for the SACE. Achievement in the university subjects counts for university course completion when the students enrol in a full undergraduate program at university. Entry into University Extension Study is by invitation of the principal using school-based selection criteria.

Credits: 10 or 20  Learning Area: Recognised Study

For further information about SACE subjects and SACE completion requirements see [www.sace.sa.edu.au](http://www.sace.sa.edu.au)

For information about the calculation of an Australian Tertiary Admission Rank (ATAR) see [www.satac.edu.au](http://www.satac.edu.au)