CAREERS INFORMATION EVENING HANDOUT

HAMILTON
SECONDARY COLLEGE

FUTURE CAREER PATHWAYS OPTIONS

- University Undergraduate Degree
- Vocational Education and Training (VET Course) at Technical and Further Education (TAFE)or other training providers
- Apprenticeship (Trades – 4 years) or Traineeship (Non-trades – 2 years)
- Transition to Full-Time Employment

Adelaide University

Flinders University

tafeSA

Government of South Australia

WHAT TO CONSIDER WHEN CHOOSING A POSSIBLE CAREER

- Job Availability and Location
- Salary
- Nature and Hours of Work (shift work, outdoor work, working with people etc.)
- Personal Interests, Dreams and Passions
- Personal Strengths and Dislikes
- Cost of training (Degree, VET/TAFE Course)
- Industry Futures
-

  When exploring career pathways, students should consider current labour market information to understand employment opportunities in their chosen industry. (https://www.jobsandskills.gov.au/data/occupation-and-industry-profiles)

USEFUL LINKS

Occupation Summaries & Career Info:

- https://myfuture.edu.au/
- https://studentpathways.sa.edu.au/

Industry Trends and Skill Shortages:

- https://www.jobsandskills.gov.au/publications/jobs-and-skills-report-2024
- https://www.jobsandskills.gov.au/data/occupation-shortages-analysis/occupation-shortage-list
- https://www.jobsandskills.gov.au/jobs-and-skills-atlas

Industry	Employment	% share
Health Care and Social Assistance	**174,000**	**18.0%**
Retail Trade	92,600	9.6%
Construction	87,000	9.0%
Education and Training	80,400	8.3%
Professional, Scientific and Technical Services	70,600	7.3%
Manufacturing	69,700	7.2%
Public Administration and Safety	64,600	6.7%
Accommodation and Food Services	57,000	5.9%
Transport, Postal and Warehousing	42,300	4.4%

SUBJECT PATHWAYS

HAMILTON
SECONDARY COLLEGE

MATHEMATICS PATHWAY – YEAR 11

Mathematical Methods

- Focuses on calculus, statistics, mathematical arguments, functions and using mathematical models
- B or higher Grade achievement prepares students for Stage 2 Maths Methods

General Mathematics

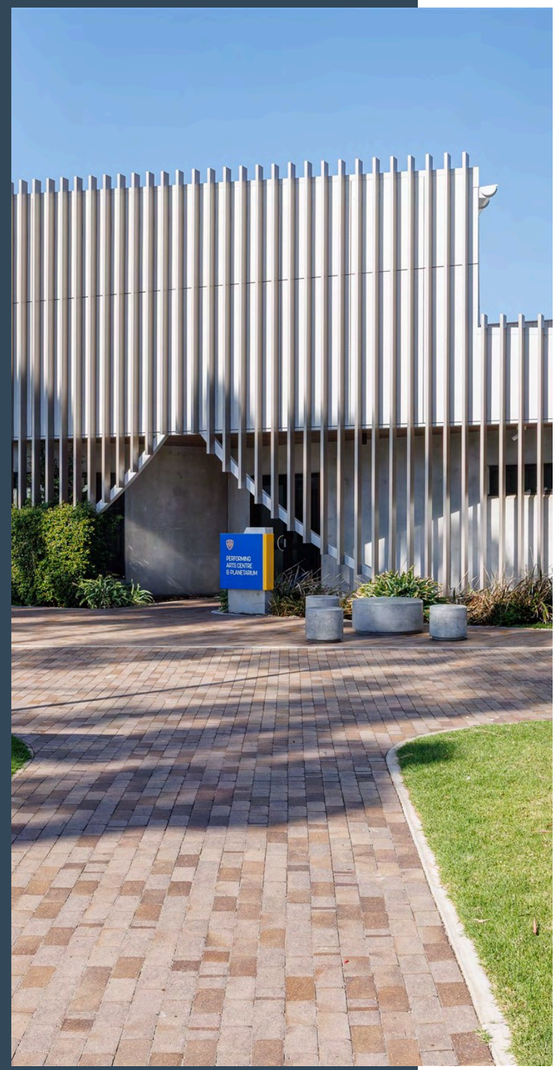
- Focuses on practical problem-solving including financial management, measurement and trigonometry, statistics, linear and non-linear functions, discrete modelling using networks and matrices
- B or higher Grade achievement prepares students for Stage 2 General Mathematics

Essential Mathematics

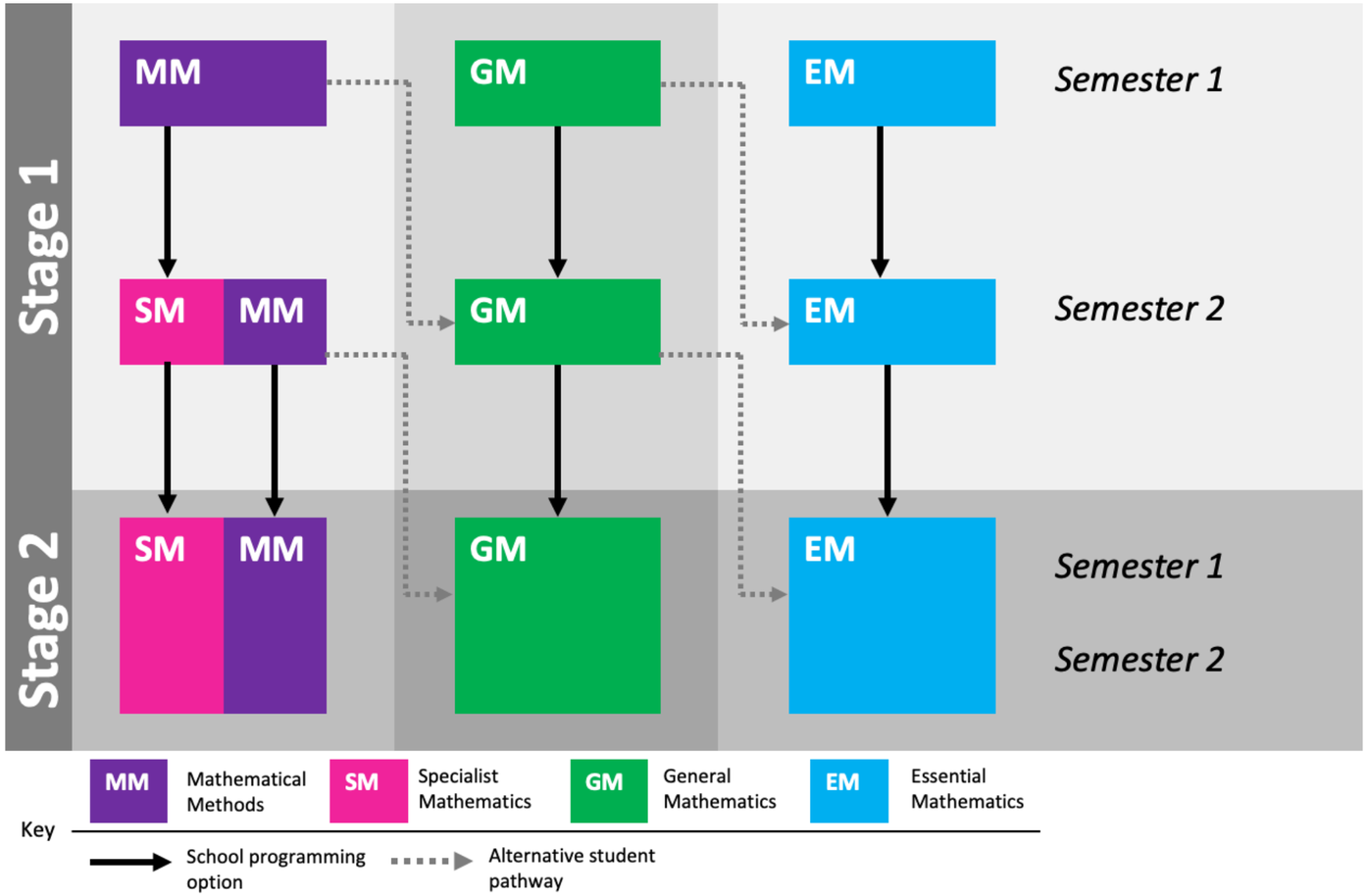
- Focuses on practical problem-solving in everyday and workplace contexts, including everyday calculations, financial management, business applications, measurement and geometry, and statistics in social contexts
- Achievement at an A level prepares students for Stage 2 Essential Mathematics

MATHEMATICS PATHWAY – YEAR 12

Specialist Mathematics	Mathematical Methods	General Mathematics	Essential Mathematics
• Specialist Mathematics draws on and deepens students' mathematical knowledge, skills, and understanding, and provides opportunities for students to develop their skills in using rigorous mathematical arguments and proofs, and using mathematical models. It includes the study of functions and calculus • Examinable subject • The subject leads to study in a range of tertiary courses such as mathematical sciences, engineering, computer science, and physical sciences. Students envisaging careers in related fields will benefit from studying this subject. • Specialist Mathematics is designed to be studied in conjunction with Mathematical Methods.	• Mathematical Methods develops an increasingly complex and sophisticated understanding of calculus and statistics. By using functions and their derivatives and integrals, and by mathematically modelling physical processes, students develop a deep understanding of the physical world through a sound knowledge of relationships involving rates of change. Students use statistics to describe and analyse phenomena that involve uncertainty and variation. • Provides students with 2 bonus points • Examinable Subject • Mathematical Methods provides the foundation for further study in mathematics, economics, computer sciences, and the sciences. It prepares students for courses and careers that may involve the use of statistics, such as health or social sciences. When studied together with Specialist Mathematics, this subject can be a pathway to engineering, physical science, and laser physics.	• General Mathematics extends students' mathematical skills in ways that apply to practical problem-solving. A problem-based approach is integral to the development of mathematical models and the associated key concepts in the topics. These topics cover a diverse range of applications of mathematics, including personal financial management, the statistical investigation process, modelling using linear and non-linear functions, and discrete modelling using networks and matrices. • Examinable Subject • Successful completion of this subject at Stage 2 prepares students for entry to tertiary courses requiring a non-specialised background in mathematics.	• Essential Mathematics offers senior secondary students the opportunity to extend their mathematical skills in ways that apply to practical problem-solving in everyday and workplace contexts. Students apply their mathematics to diverse settings, including everyday calculations, financial management, business applications, measurement and geometry, and statistics in social contexts. • In Essential Mathematics there is an emphasis on developing students' computational skills and expanding their ability to apply their mathematical skills in flexible and resourceful ways. • Examinable subject • This subject is intended for students planning to pursue a career in a range of trades or vocations



MATHS PATHWAY



MATHS CAREER LINKS

A strong foundation in mathematics opens doors to diverse and rewarding career paths, both within traditional mathematical fields and in unexpected areas. Many jobs utilize mathematical skills, even if the link isn't immediately obvious.
https://careerswithstem.com.au/a-z-of-maths-careers/ [A to Z of Math careers]

Traditional Mathematical Fields
Mathematician:
Develops new mathematical principles, identifies relationships between existing principles, and creates models for problem-solving in various fields.

Statistician:
Analyzes data, identifies patterns, and uses statistical methods to draw conclusions and make predictions.

Actuary:
Assesses financial risks, particularly in insurance and pensions, using mathematical and statistical models.

Operations Research Analyst:
Applies mathematical models and techniques to optimize complex systems and processes.

Mathematical Scientist:
Applies mathematical principles to solve problems in various scientific fields.

Mathematical Modeler:
Creates mathematical representations of real-world systems to understand and predict their behavior.

Advised Mathematical Course
Stage 1 & 2 Mathematical Methods / Stage 2 Specialist Mathematics

Degrees: Bachelor of Mathematics / Bachelor of Mathematical Studies / Double Degree with Mathematics

ENGINEERING CAREERS – UNIVERSITY

Engineering is a dynamic field that applies principles of science and technology to invent, design, build, and utilize machines, systems, and structures that address problems and achieve practical goals.
Engineers work across various domains to create solutions that improve our daily lives and drive progress.
https://www.indeed.com/career-advice/finding-a-job/best-engineering-field-for-the-future

Top 8 of 15 best engineering jobs for the future

- Civil engineering technician. ...
- Cartographer. ...
- Aerospace engineering technician. ...
- Industrial engineer. ...
- Agricultural engineer. ...
- Mechanical engineer. ...
- Marine engineer. ...
- Civil engineer.

Advised Mathematical and Science Course
Stage 1 & 2 Mathematical Methods / Stage 2 Specialist Mathematics
Stage 1 & 2 Physics
Stage 1 & 2 Chemistry [Optional but opens many pathways]

Degrees: Bachelor of Engineering
Double Degree with Mathematics / Computer Science / Science

OTHER ENGINEERING PATHWAYS

Alternative Pathways into Engineering include VET (TAFESA and other RTOs)

Associate Degree (2 Years VET, 2 Years University)

- What is an associate degree?
  - Our associate degrees in engineering blend practical, hands-on training with personalised support in small, focused classes. Graduate with the skills to:
  - Work as a qualified engineering paraprofessional
  - Pursue further university study
  - Take the next step in your career
- https://www.tafesa.edu.au/courses/mining-engineering-automotive/associate-degrees-in-engineering

Advised Mathematical and Science Course

Stage 1 & 2 Mathematical Methods
Stage 1 & 2 Physics
Stage 1 & 2 Chemistry [Optional but opens many pathways]

Certificate III / Diploma Technical Engineer

- Interested in drafting and design? This nationally recognised course will get you started for a career in a drafting office or as an engineering technician. Gain the skills you need to produce detailed drawings and 3D models, and design and develop prototypes using computer-aided design (CAD) programs and processes.
- https://www.tafesa.edu.au/xml/course/aw/aw_TP01421.aspx?S=AWD&Y=2026

Advised Mathematical and Science Course

Stage 1 & 2 Essential Mathematics or Higher
Stage 1 & 2 Physics

CAREERS WHERE MATHS IS CRUCIAL

Data Scientist:
Analyzes large datasets to extract meaningful insights and patterns, using statistical and computational techniques.

Financial Analyst:
Evaluates financial data, provides investment recommendations, and manages financial risk.

Economist:
Studies the production, distribution, and consumption of goods and services, using mathematical and statistical models.

Computer Programmer:
Writes and tests code to create software applications, utilizing mathematical concepts and logical reasoning.

Research Analyst:
Collects and analyzes data to support research projects, often in social sciences, market research, or other fields.

Market Research Analyst:
Studies consumer behavior and market trends to help businesses make informed decisions, often using statistical analysis.

Digital Marketing Analyst:
Develops and implements marketing strategies based on data analysis and online sales trends.

Data Engineer:
Develops systems for collecting, storing, and transforming data, often using algorithms and statistical techniques.

Advised Mathematical Course
Stage 1 & 2 Mathematical Methods or Stage 1 & 2 General Mathematics

Degrees: Bachelor of Mathematics / Bachelor of Mathematical Sciences/Double Degree with Mathematics and another Degree

TIPS FOR CAREERS WITH MATHS

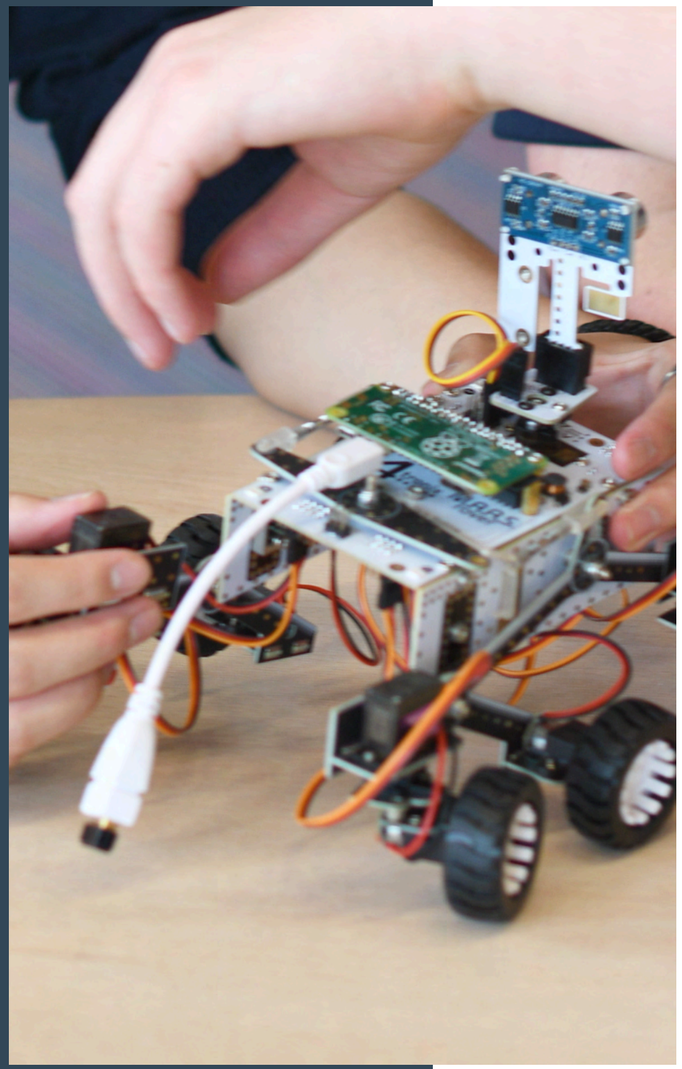
Tips for exploring careers in math:

Research different career paths:
Explore online resources, career guides, and profiles ofindividuals working in math-related fields.

Identify your interests:
Consider your passions and how they can be combined withmathematical skills.

Gain practical experience:
Seek internships, volunteer opportunities, or research projects to gain hands-on experience.

Develop strong mathematical skills:
Focus on building a solid foundation in mathematics and related subjects [Need strong results and study in Year 7-10].



SCIENCE PATHWAY - YEAR 11

BIOLOGY

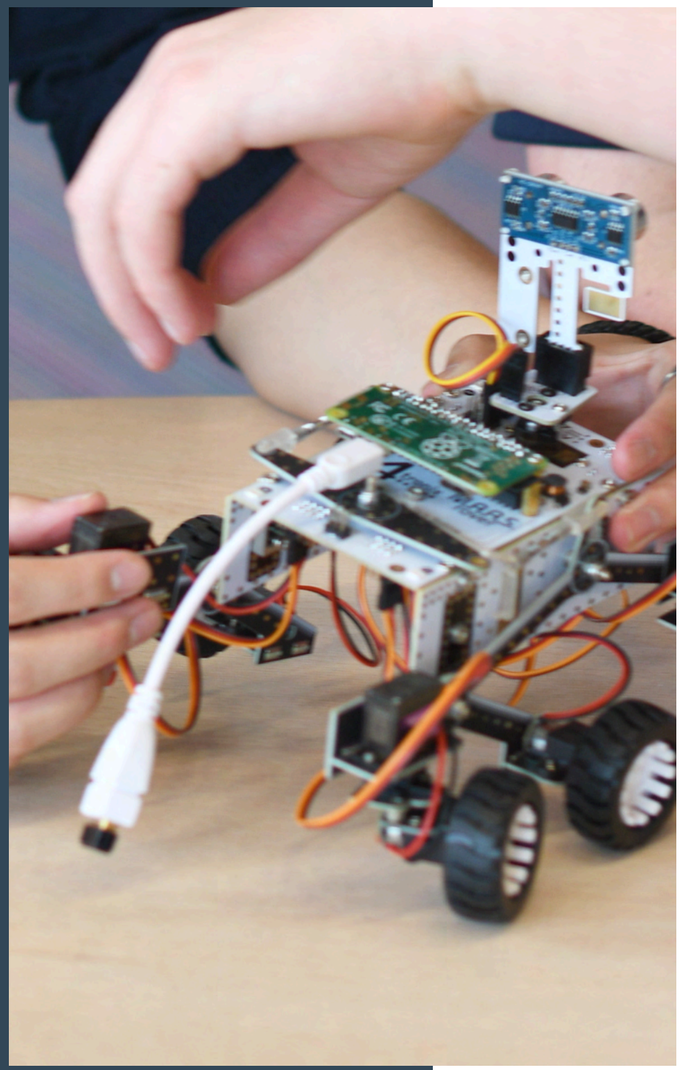
- Focuses on Cells and microorganisms, Infectious Disease, Multicellular organisms and Biodiversity & ecosystem dynamics
- B or higher Grade achievement prepares students for Stage 2 Biology

CHEMISTRY

- Focuses on Materials and atom combinations, Molecules, Mixtures and Solutions, Acid and Bases, Redox reactions
- B or higher Grade achievement prepares students for Stage 2 Chemistry

PHYSICS

- Focuses on Linear motion and forces, electric circuits, heat, energy and momentum, waves, nuclear models and radioactivity
- Achievement at an A level prepares students for Stage 2 Physics



SCIENCE PATHWAY

Year 10 Science [Need B grade or higher to continue in Year 11]

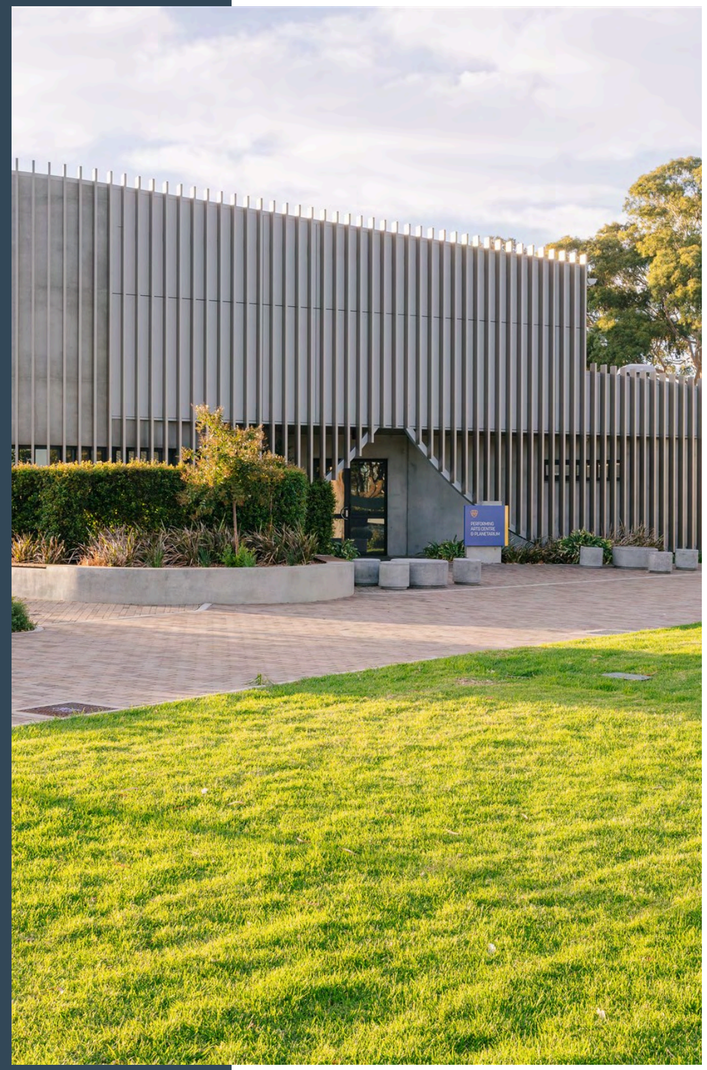
Year 10 Science [includes Exam Results]

Year 11 / Stage 1 - B Grade or higher (2 Semesters)

- Stage 1 Biology
- Stage 1 Chemistry
- Stage 1 Physics

Year 12 / Stage 2 (Full Year Subject)

- Stage 2 Biology
- Stage 2 Chemistry
- Stage 2 Physics



SCIENCE CAREER LINKS

Realistic opportunities for a science career. Generally, they rely on doing specialist postgraduate study after a general science degree.
Many people who finish university with a Bachelor of Science degree, and don't do further study, find employment in "non-science" roles in business or government.
https://mallory.com.au/science-careers-list/
https://careerswithstem.com.au/the-a-z-stem-careers-list/

The main job roles in a science career are:

- Researcher – expand the frontiers of scientific knowledge
- Technician – physically carry out tests and experiments
- Applied scientist – apply science knowledge for practical uses
- Science-based profession – such as pharmacy and veterinary practice
- Educator – teach science at a school or university.

Choose advised Science Course

- Stage 1 & 2 Chemistry
- Stage 1 & 2 Physics
- Stage 1 & 2 Biology

Degrees: Bachelor of Science / Bachelor of Mathematical Sciences / Double Degree with Bachelor of Science and Mathematics or another course

SPACE CAREER PATHWAYS

Hamilton Secondary College - Space Academy and Space Curriculum provide context for high level Mathematics, Science and Cross Curriculum Concepts

Contact with Experts, Space Research and Space Industry Personnel through Talks, Visits and Excursions from a variety of Space Industries including Satellite building and Communication, Rovers & Rockets, Space Medicine, Plants in Space and Astronomy

- Inspire students with real Space/STEM careers
- Build student skills and confidence to apply for opportunities through work experience, internships, traineeships and scholarships

For more information regarding space careers:

- Come to Space Careers Night : 6:00-7:30 pm Wednesday 27th August, 2025

- https://www.space.gov.au/careers-in-space-booklet

ENGLISH PATHWAY - YEAR 11

English

- Focuses on literature and analytical skills
- Prepares students for Stage 2 English or English Literary Studies

Essential English

- Focuses on modern media, creative and informative writing skills
- Prepares students for Stage 2 Essential English

English as an Additional Language (EAL)

- SACE Requires students to:
  - Speak another language at home
  - have moved to Australia within the last 5 years or
  - language is deemed as restricted by the school
- Focuses on modern media and clear communication skills
- Prepares students for Stage 2 EAL

ENGLISH PATHWAY – YEAR 12

English Literary Studies

- Majority of the course focuses on literary analysis
- Examinable subject
- Provides students with 2 bonus points

English

- Focuses on literature and analytical skills
- Provides students with 2 bonus points
- Required for entry to interstate Universities

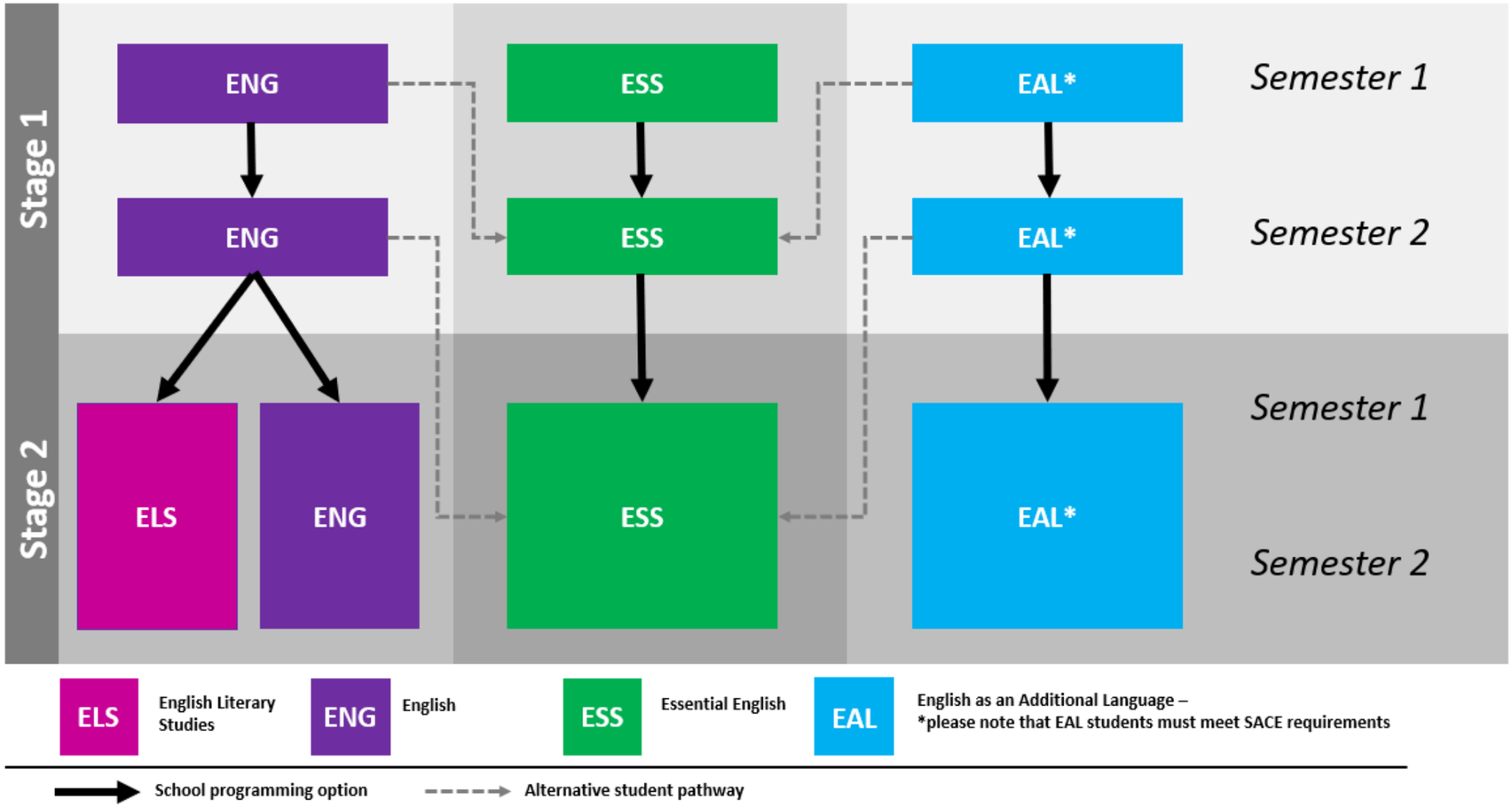
Essential English

- Focuses on modern media, creative and informative writing skills
- A popular choice for students to improve their writing and analytical skills

English as an Additional Language (EAL)

- SACE Requires students to:
  - Speak another language at home
  - have moved to Australia within the last 5 years or
  - language is deemed as restricted by the school
- Focuses on modern media and clear communication skills
- Examinable subject

ENGLISH PATHWAY

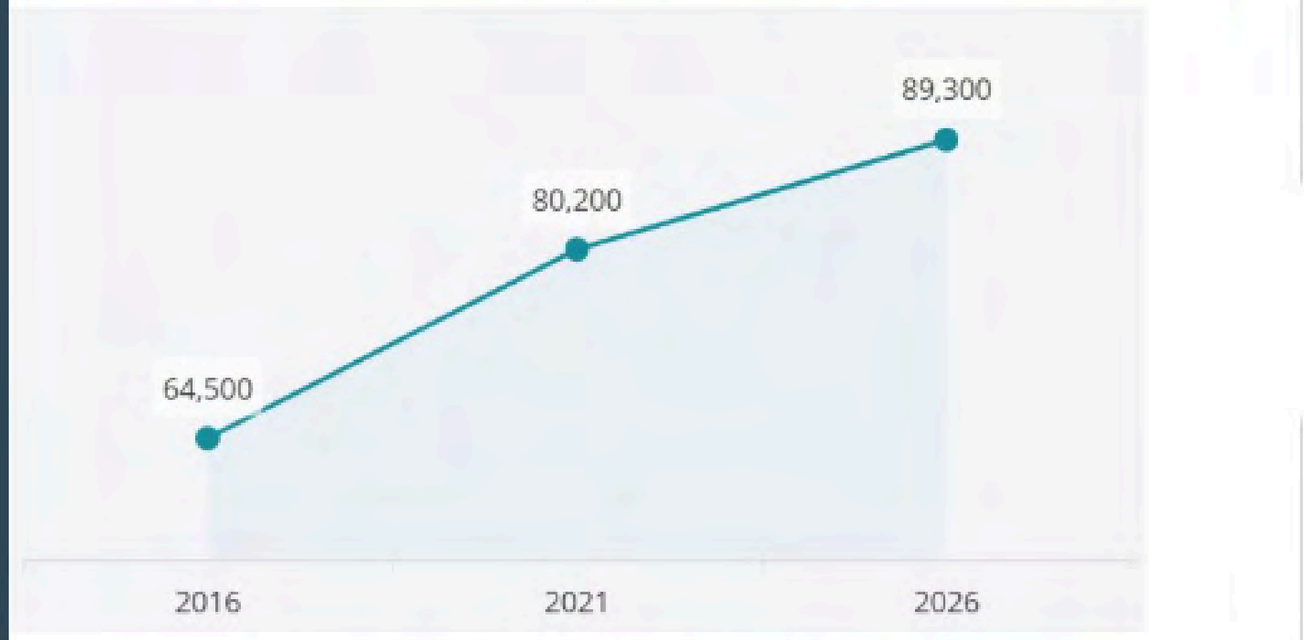


ENGLISH CAREER LINKS

Future growth: Strong

Projected employment growth in 5 years

Job opportunities for Advertising and Marketing Professionals



Source: Jobs and Skills Australia, jobsandskills.gov.au.

Career: Advertising and Marketing

Advised English Course: Stage 2 English or English Literary Studies

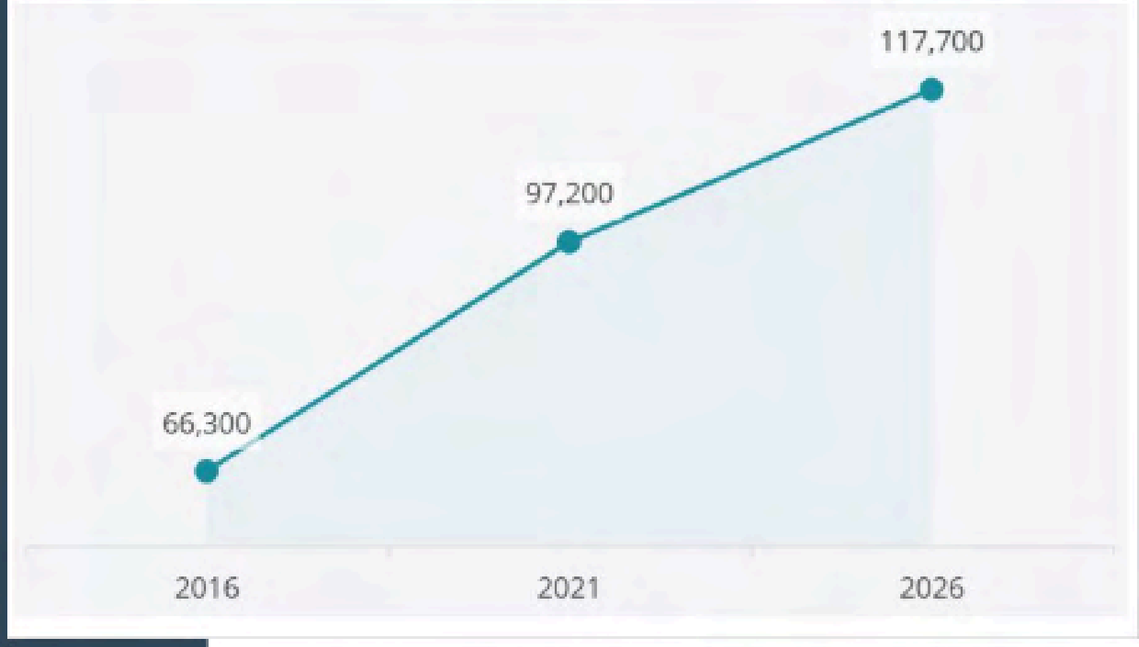
Degrees: Bachelor Degree in advertising, marketing, commerce, business management, or communications

ENGLISH CAREER LINKS

Future growth: Very Strong

Projected employment growth in 5 years

Job opportunities for Solicitors



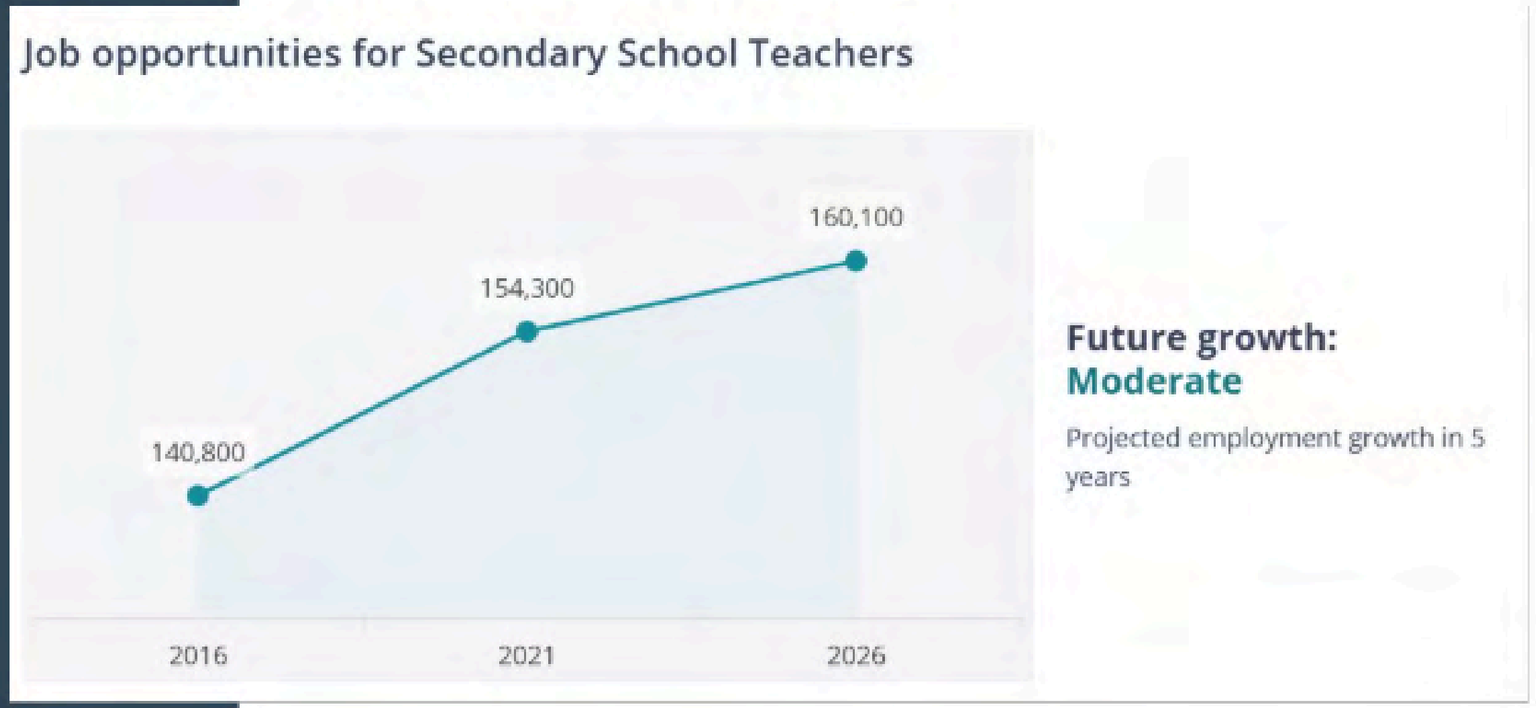
Source: Jobs and Skills Australia, jobsandskills.gov.au.

Career: Law

Advised English Course: Stage 2 English or English Literary Studies

Degrees: Bachelor Degree in Law

ENGLISH CAREER LINKS



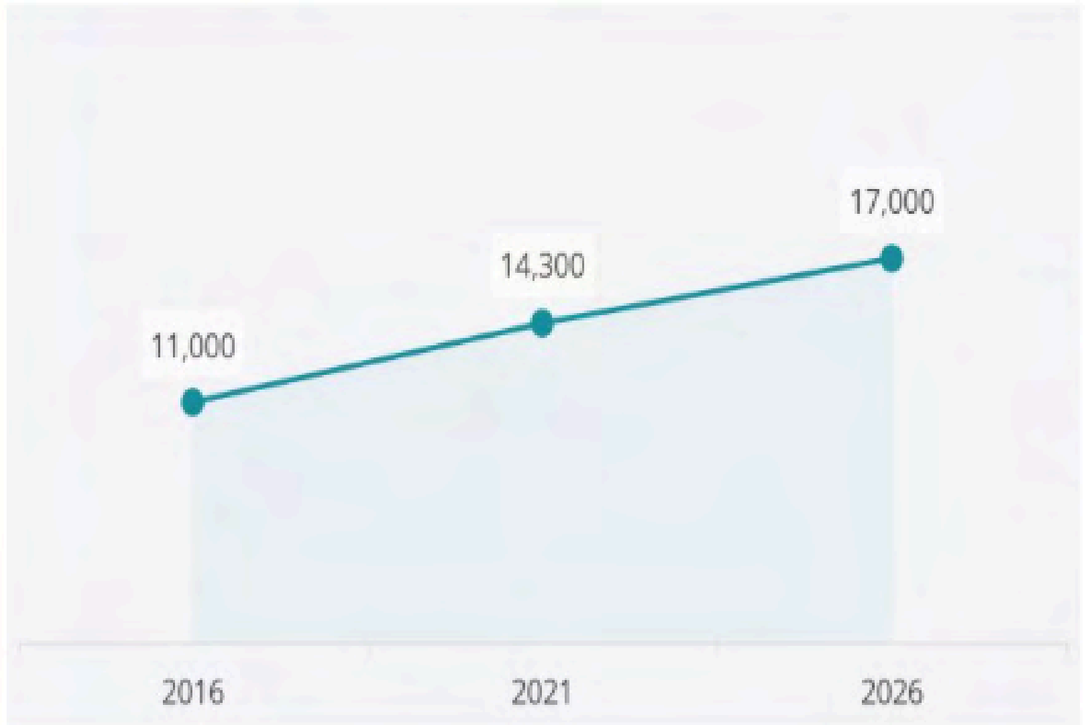
Source: Jobs and Skills Australia, jobsandskills.gov.au.

Career: Education

Advised English Course:
Stage 2 English or English Literary Studies or Essential English for Primary Education

Degrees: Bachelor Degree in education majoring in secondary education, primary education or early learning.

ENGLISH CAREER LINKS



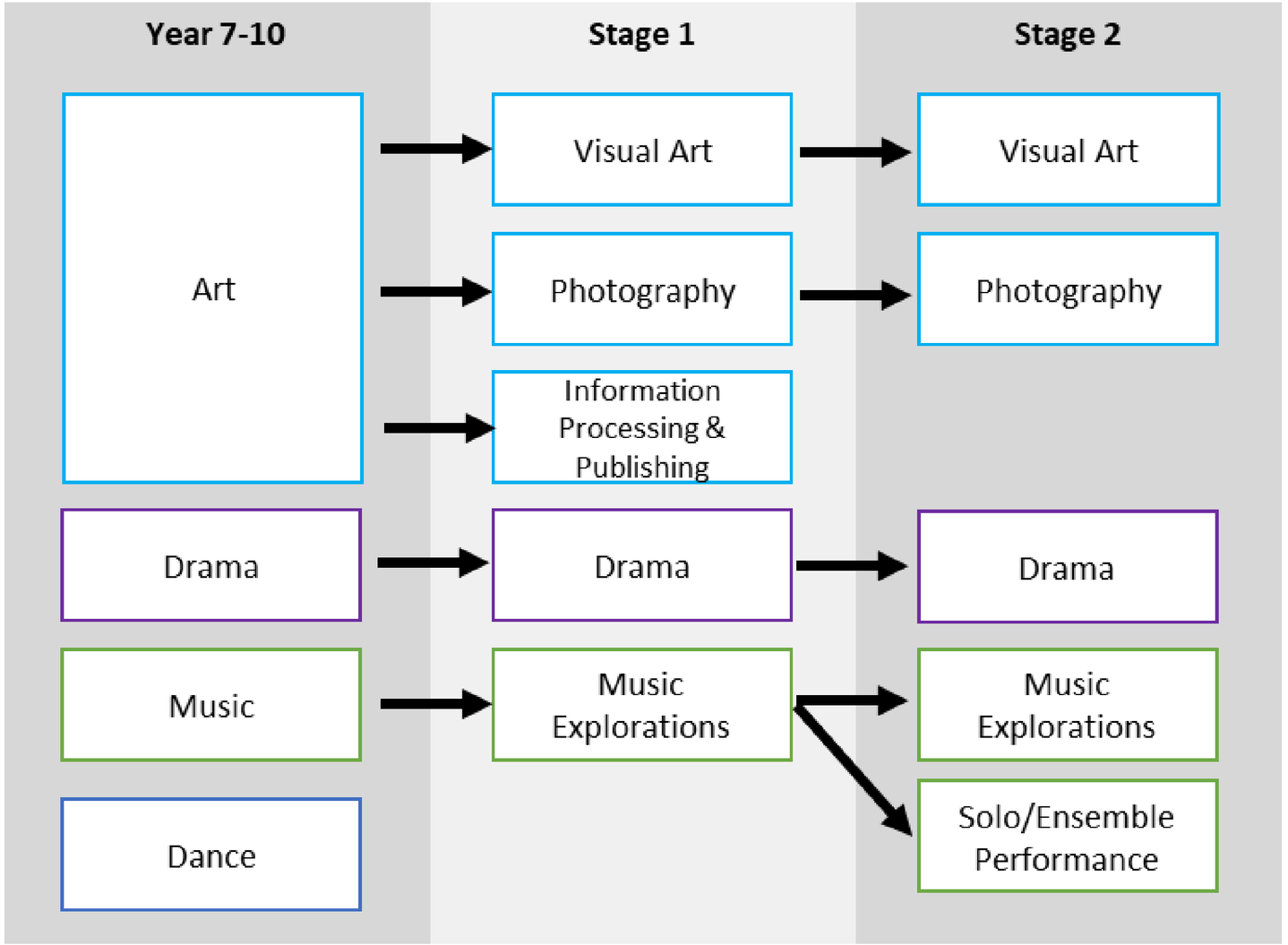
Source: Jobs and Skills Australia, jobsandskills.gov.au.

Career: Social Work

Advised English Course: Any English courses

Degrees: Bachelor Degree in Arts, Social Work, Disability Studies or Behavioral Sciences

CREATIVE ARTS PATHWAYS



CREATIVE ARTS PATHWAYS

Music

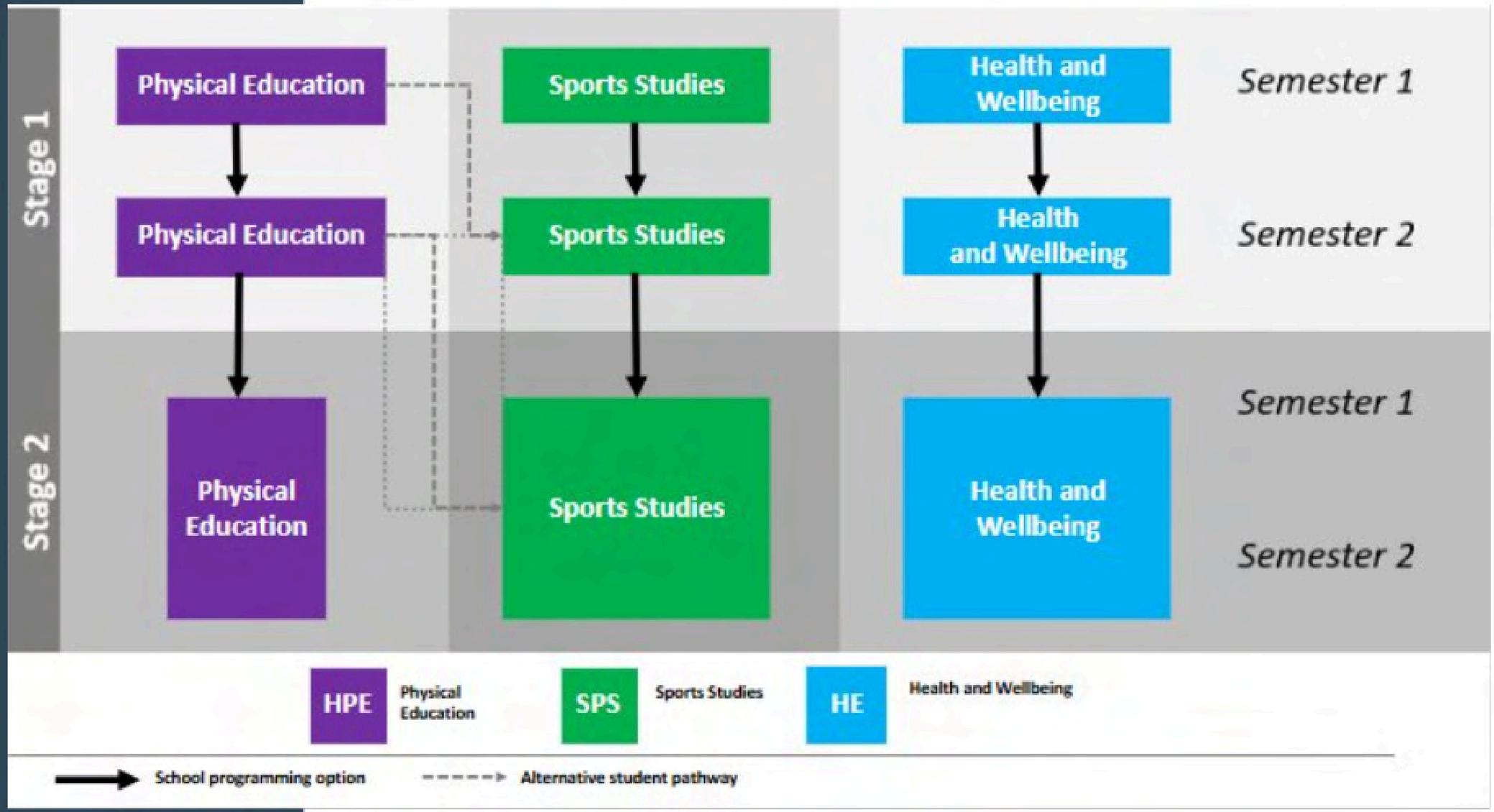
- Bachelor of Music at the Elder Conservatorium of Music-requires audition to gain entry
- TAFE avenues: Certificates and Diploma of Music - requires an audition
- or Certificate in Music and Sound Production

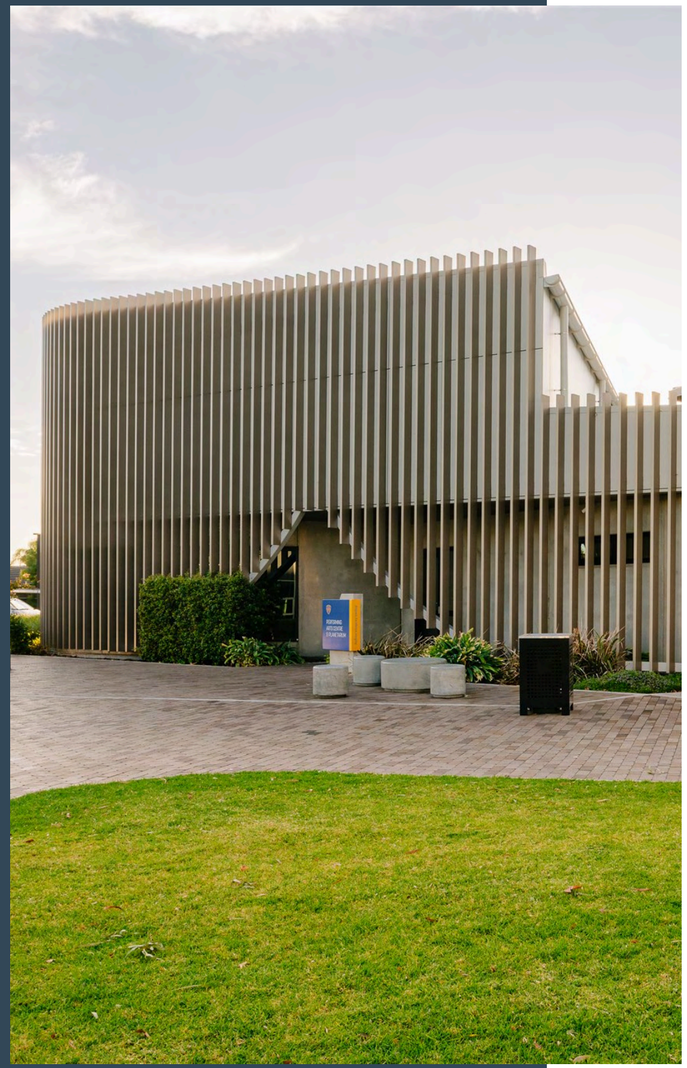
Creative and Performing Arts

- Bachelor of Arts (Creative Writing, Dance, Design, Art)
- Bachelor of Performance
- Certificate IV in Dance

- Many creative courses require a portfolio of work

HEALTH PATHWAYS





HEALTH SACE SUBJECT PATHWAYS

Physical Education

- Focus on the practical and theoretical side of PE.
- Biomechanics, Energy Systems, Physiology
- Training Methods
- Performance Improvement (Practical)
- Links to Sports Science, Physiotherapy, Coaching, PE Teaching, Human Movement, Occupational Therapy, Health Promotion

Health and Wellbeing

- Focus on health related issues (Mental, Physical, Social, Psychological)
- Health promotion and intervention
- Free choice to explore areas of interest within health
- Link to Medicine, Dentistry, Nursing, Occupational Therapy, Speech Therapy, Physiotherapy, Paramedicine.

Sports Studies

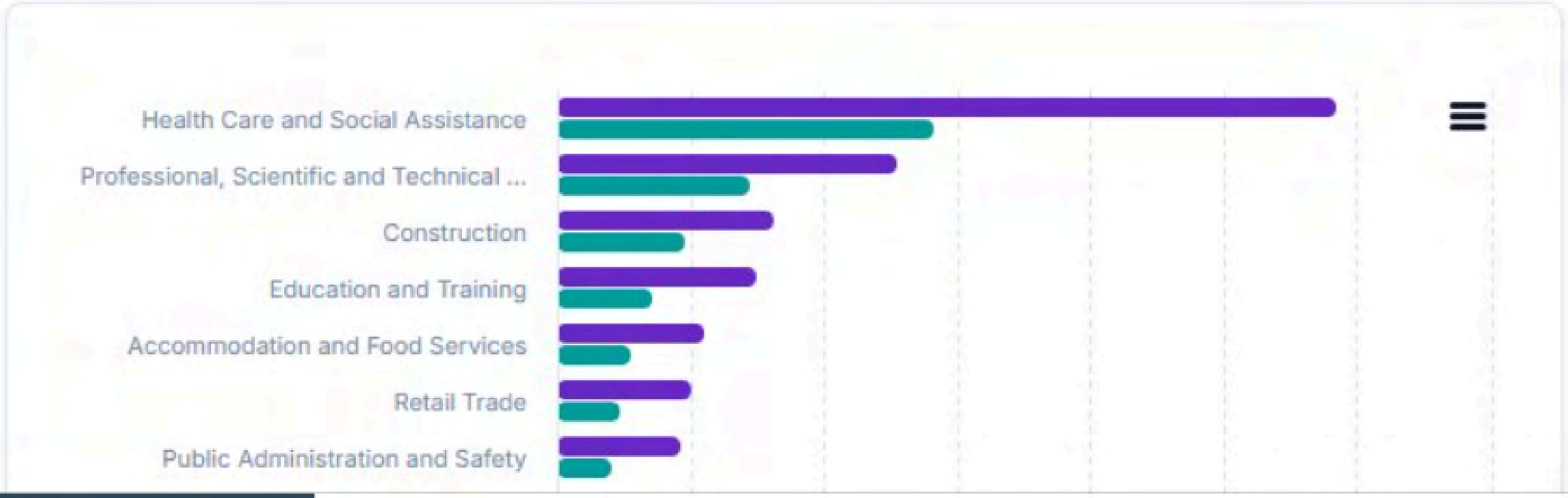
- Focuses on organisational side of PE including coaching and event coordination
- Heavy focus on peer and self-evaluation and feedback
- Career links to Sports Coaching, PE Teaching, Event Management, Sports Management, Personal Trainer.

Psychology

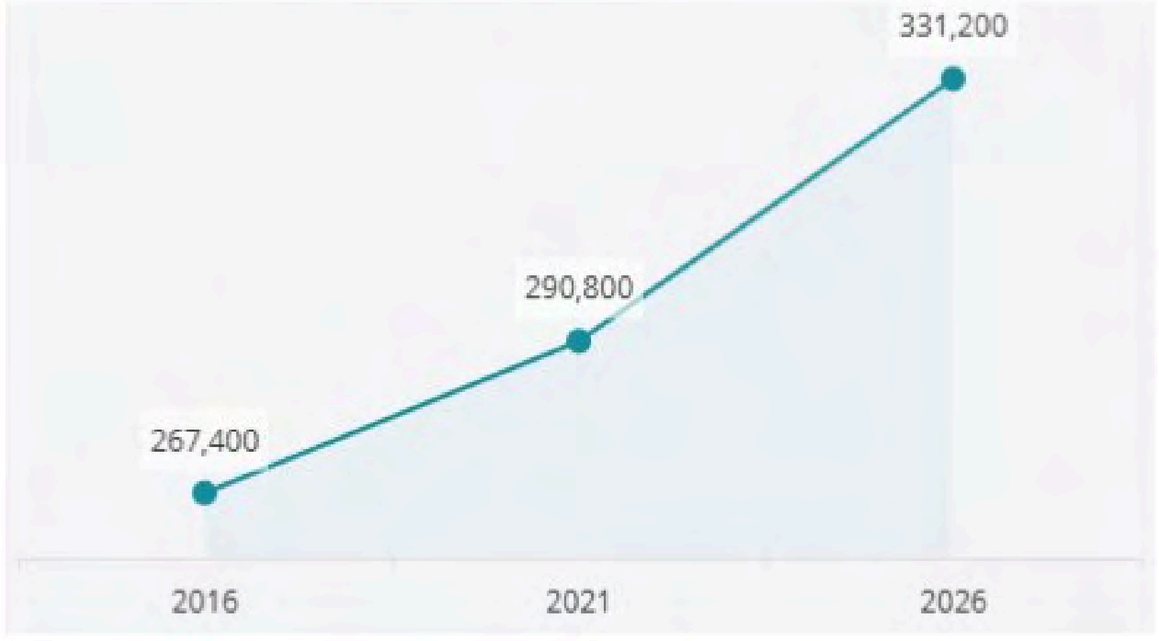
- Focuses on study of human behaviour, psychology of learning, social influence and psychological health and wellbeing.
- Career links to clinical psychologist , social work, forensic psychologist, Police, Human Resources (HR)

HEALTH PATHWAYS

Figure 1: Projected employment growth by industry (5 and 10 years), Persons, Australia



HEALTH PATHWAYS



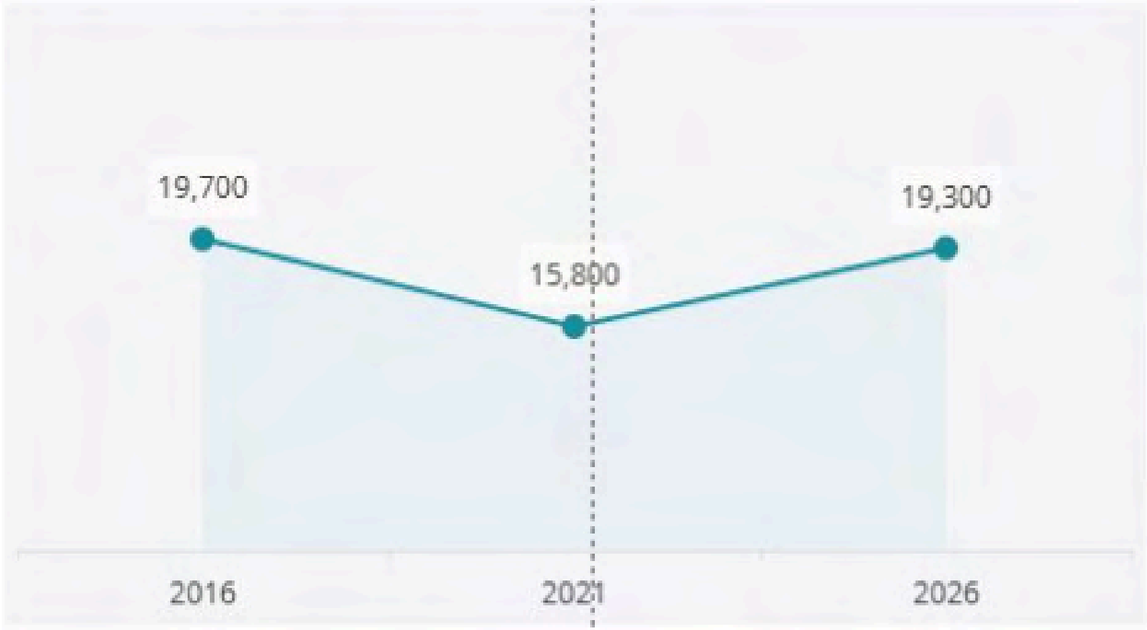
Career: Registered Nurse

Advised Health Course: Stage 1 and 2 Health and Wellbeing

Degrees: Bachelor of Nursing (pre-registration)

HEALTH PATHWAYS

Job opportunities for Midwives



Future growth: Very Strong

Projected employment growth in 5 years

Source: Jobs and Skills Australia, jobsandskills.gov.au. Based on ABS Labour Force Survey, ABS seasonally adjusted data to November 2021 and Jobs and Skills Australia Employment Projections to 2026.

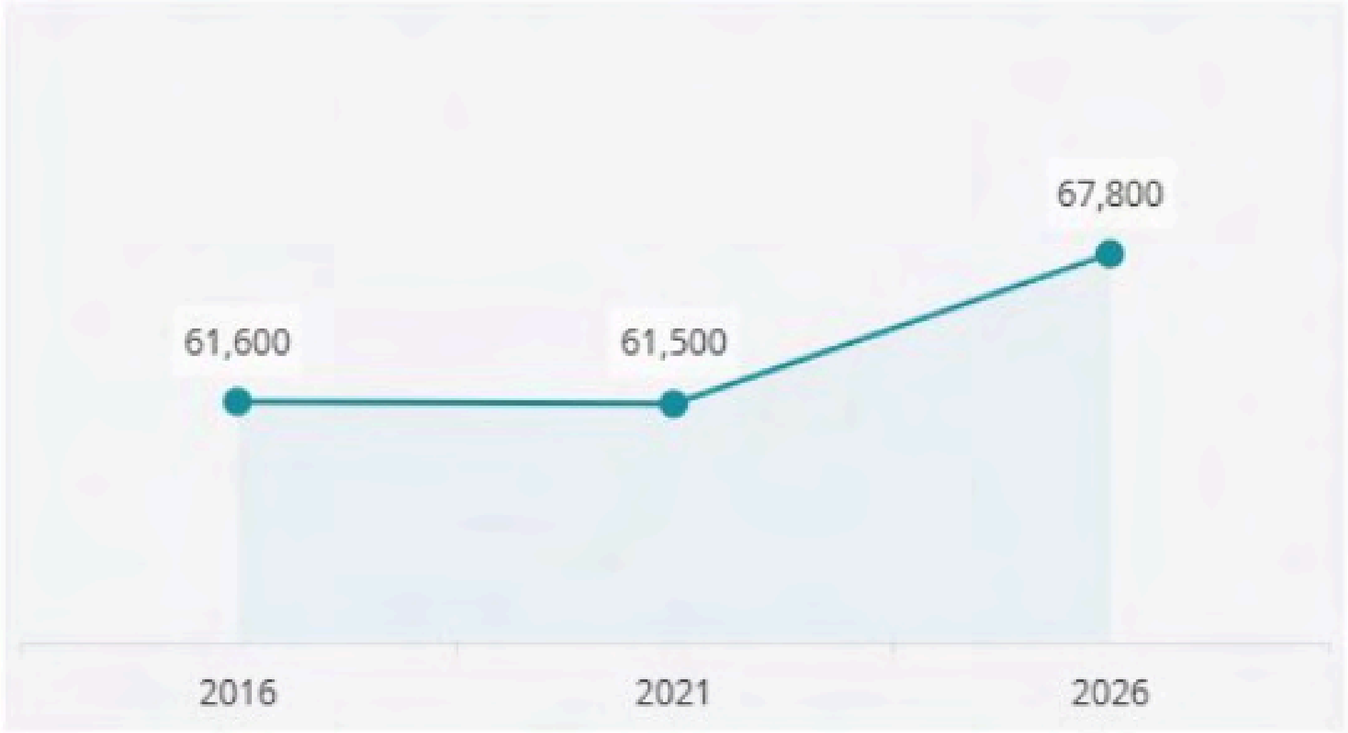
Career: Midwife

Advised Health Course: Stage 1 and 2 Health and Wellbeing

Degrees: Bachelor of Midwifery (pre-registration)

HEALTH PATHWAYS

Job opportunities for General Practitioners and Resident Medical Officers



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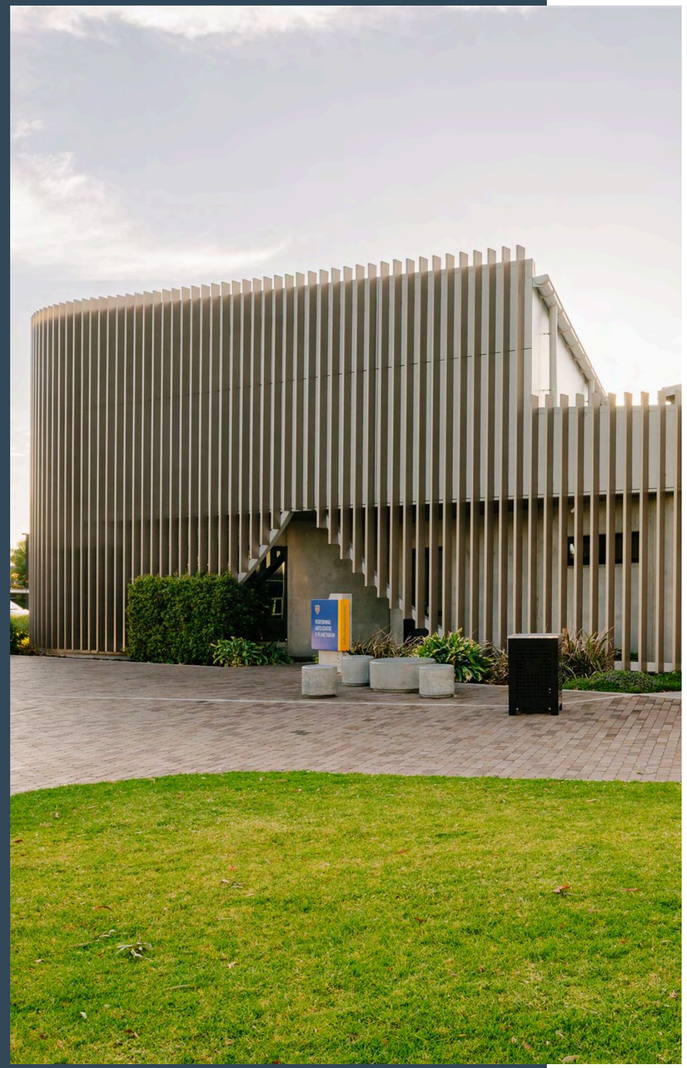

MEDICINE - ENTRY REQUIREMENTS

- One of the most competitive courses to enter at University.
- ATAR is typically 95 or higher.

- Students need to complete:
-

1) Study Maths Methods, Biology or Chemistry in Year 12 (Uni prerequisite subjects vary based on the Uni)
2) University Clinical Aptitude Test (UCAT) during Year 12 (tests aptitude for medical studies).
2) Achieve an ATAR of 95+
3) Complete their University Application
4) If invited, complete an Interview with their chosen University

WHAT IS VET? HAMILTON SECONDARY COLLEGE RTO

- Vocational Education and Training (VET) courses are nationally recognised qualifications available to students in Years 11 and 12,which can contribute to the completion of the South Australian Certificate of Education (SACE).

- Hamilton Secondary College (HSC) is a Registered Training Organisation (RTO 0561) accredited to deliver nationally recognised Vocational Education and Training (VET) qualifications and courses.
-

Our RTO delivers the following qualifications:

- MEM20422 Certificate II in Engineering Pathways
- CUA31020 Certificate III in Screen & Media (Film)

HSC PRE- VET COURSES

Home Economics

- Barista (offered in Years 9 and 11 to develop FOH skills).
- Cookery skills (offered in Year 10 to develop BOH skills)

Design & Technology

- CAD (Computer Aided Design offered in Year 9 link to Engineering)
- Certificate II in Engineering Pathways (Year 7-12 Metal Work)
- Construction (7-12 Woodwork)

- Filmmaking (Year 9 elective)
- Certificate III in Screen & Media (Film focus) HSC is partnered with Flinders University Creative Arts Degree

VET OPTIONS

- Students have the opportunity to access a variety of VET options off-campus provided by training organisations like TAFE SA and other private providers.

- The Department for Education has identified 25 Flexible Industry Pathways (FIPs) that offer subsidies to students. These qualifications are in areas that are important for economic growth, job opportunities, and addressing skills shortages.

- The FIPs available for students in 2026 include: https://www.education.sa.gov.au/docs/spc/vocational-education-and-training-courses-for-school-students.pdf and/or https://studentpathways.sa.edu.au/

VET & SCHOOL BASED APPRENTICESHIPS & TRAINEESHIPS CAREER LINKS

- Students in Years 10, 11, or 12 have the option to start a part-time, school-based apprenticeship or traineeship while still attending school to achieve their SACE.

- What is the difference between a school-based apprenticeship and traineeship?
- Apprenticeships and traineeships are both structured training programs that combine on-the-job experience with formal education.

- Apprenticeships typically focus on skilled trades like carpentry, electrical work, or plumbing, cookery, hairdressing and often take 3-4years to complete.
- Traineeships, on the other hand, are more common in non-trade areaslike business administration, retail, or childcare, and usually take 1-2years.

VET & SCHOOL BASED APPRENTICESHIPS & TRAINEESHIPS CAREER LINKS

- Students typically secure their own host employer through work experience or by completing a certificate course. Once a host company agrees to take them on as an apprentice or trainee the process can begin.
-
- The following link can be used to learn more about School-based apprenticeships and traineeships:
- https://mytraining.skills.sa.gov.au/trainees-apprentices/thinking-about-traineeship-apprenticeship/school-based-apprenticeships

ATAR AND APPLYING FOR UNIVERSITY

- University Applications open in August of Year 12
-
- Australian Tertiary Entrance Rank (ATAR) score is determined by Year 12 grades (plus AIF in Year 11) and determines which University Degrees students can enter.
-
- Students put in 6 preferences of University Courses they wish to enter.
-
- Applications stay open until mid-December for change of preferences
-

ACCELERATE PROGRAM

The Hamilton Accelerate Program provides students the opportunity to:

- Study a University subject alongside first year university students as one of their year 12 subjects
- University subjects count towards student ATAR scores and students can use their course credits towards their degree if they study at the University where they completed their studies.
- Get a head start on their SACE and extend their knowledge, skills and abilities to prepare them for University Studies.
- Maximise their ATAR (Australian Tertiary Admission Rank for University).

TIPS & TRICKS FOR SUCCESS

How can you reach your career pathway?

- Develop strong learning behaviours (Study Habits)
- Begin career pathway discussions early (Years 7-9)
- Know your subject pathway
- Attend University Open Days
- Complete online research
- Check out the SATAC Guide online
- Engage with school excursions to Careers Expo or Open Days
- Explore many different career pathway options

THANK YOU