



Guildford Grammar School

FOUNDED 1896

Year 9

Course Selection
Handbook 2024



Introduction

Welcome to Year 9 at Guildford Grammar School. This is a key year in the development of each student as they move from early to middle adolescence.

In Year 9, students' sense of self becomes a defining feature of their development and this plays a key role in their thought processes around their future pathways. Young people become even more aware of the wider world around them and begin to evaluate their own place within it, especially as they begin to make more concrete choices about their future pathways.

In Year 9, students are able to personalise their curriculum further as the compulsory components of the curriculum give way to more choice for students.

There are six courses that are studied by all students

- Maths
- English
- Science
- Humanities & Social Science
- Religion, Philosophy & Ethics
- Health & Physical Education

Alongside these, students are able to choose from a range of Discovery Courses. These course choices are designed to allow students to personalise their experience while still meeting the curriculum requirements of the WA Curriculum.

As students move from Year 8, their choices are not bound by Western Australian Curriculum requirements and they can freely choose based on their interests. This also brings new courses into the curriculum, including those that extend student knowledge and skills in Physical Education and Philosophy & Ethics.

Along with the rich co-curricular program of Guildford Grammar School, we trust that you child will experience a diverse and fulfilling curriculum,

Bruce Derby

Deputy Principal: Learning, Leadership & Transformation

Year 9 course index

Below is the full list of courses on offer at Guildford Grammar School, including the compulsory courses and the elective discovery courses.

Compulsory courses

English

Mathematics

Humanities and Social Sciences

Science

Health and Physical Education

Religion, Philosophy and Ethics

Discovery courses

Chinese

Computer Science

Dance

Design for Metal

Design for Wood

Drama

Engineering Studies

The Ethics of Games

French

Graphic Design

Media Production & Analysis

Music Exploration

Sports Science

Visual Art

English • compulsory

English provides progressive instruction in the wide range of language-based literacies required to be a confident and critical communicator. The course is constructed in accordance with the concepts of Language, Literature and Literacy from the Western Australian Curriculum.

Through the study of English, students will gain a range of functional and critical skills, developing their ability to examine texts, topics and express their ideas. Students will also expand upon their use and understanding of text types.

All students in Years 7-9 study the same core program.

However, from Semester 2 in Year 7 and in Year 8-9 they will be grouped by similar learning needs and given appropriate remediation or extension, both individually and as a class.

The **Year 9 English** course aims to develop critical skills through a range of more challenging texts and topics. To facilitate this, the students' study will include: Writing to create change; Heroes and Villains; Citizens and Society; Technology and the Future and the creation of Digital Game based narratives. Students will also have a greater element of choice in certain assessments to help foster their growth as independent learners.

Skills and understandings covered are:

- Advanced academic essay writing, complex sentence and argument construction
- Stereotypes and character representation, representations of attitudes and values
- Conventions: audience, context and genre
- More complex generic conventions in a variety of films, novels, drama texts and short stories covering a more sophisticated range of issues and concepts

Contact

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Mathematics • compulsory

Mathematics provides progressive instruction in mathematical skills, processes and concepts. The courses are constructed in accordance with the Western Australian Curriculum.

Through the study of Mathematics, students will gain a range of process-based problem-solving skills, developing the ability to investigate, interpret, check and generalise results. Students will also expand upon their understanding of mathematical concepts and use appropriate technology to assist the mathematical process.

All students in Year 7-9 study the same core program. They will be grouped by similar learning needs, and given appropriate remediation or extension, both individually and as a class.

In Year 9, the topics covered are:

- Number: direct proportion, index laws, scientific notation, simple interest
- Algebra: expansion of binomial expressions, linear graphs, midpoint and length of line segment
- Geometry: similar triangles, ratio in similar figures
- Measurement: Pythagoras and trigonometry
- Chance & Data: two step chance experiments, back to back stem and leaf plots, skewness of data sets.

Students will be assessed on a regular basis with topic tests and investigations, in which students can demonstrate their conceptual knowledge and problem-solving skills.

Contact

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Humanities and Social Sciences (HASS) • compulsory

Humanities and Social Sciences (HASS) is a core subject in the Year 9 curriculum that sees students study human behaviour and interaction in social, cultural, environmental, economic and political contexts. It has a historical and contemporary focus, from personal to global contexts, and considers opportunities and challenges for the future. By studying HASS, students will develop the ability to question; think critically; make decisions based on evidence; devise proposals for actions; and communicate effectively.

Developed in line with the WA Curriculum, the Humanities and Social Sciences learning area consists of four courses: Civics and Citizenship, Economics and Business, Geography, and History. Each year, students undertake two Action Projects which foster increasing independence in critical thinking and skill application.

Through these engaging and innovative projects students develop:

- A deep knowledge and sense of wonder, curiosity and respect for places, people, cultures, events, ideas and environments throughout the world
- An appreciation of the past and the forces that shape society
- Enterprising behaviours and capabilities that enable them to be active participants and decision-makers in matters affecting them, which can be transferred into life, work and business opportunities
- An understanding of, and commitment to, the concepts of sustainability to bring about equity and social justice
- A knowledge and understanding of the connections among the peoples of Asia, Australia and the rest of the world.

In **Year 9**, students study:

- The Modern period (1750 – 1918)
- Political parties, elections and the Australian Court System
- Biomes and food security
- Globalisation – 'Our Shrinking World'
- Macroeconomics - Australia and the Global Economy.

Contact

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Science • compulsory

Science is a core subject in the Year 9 curriculum that sees students study three interrelated strands: Science Understanding, Science as a Human Endeavour and Science Inquiry Skills. Together, the three strands of the WA Science curriculum allow students to develop their scientific literacy skills in order to understand and analyse information they will be faced with in an ever-evolving world, while encouraging students to question, investigate and derive evidence-based conclusions to apply their scientific understandings to real world scenarios and issues.

The Science Understanding (SU) strand comprises of four sub-strands. These include: Biological Sciences, Chemical Sciences, Physical Sciences and Earth and Space Sciences. Science as a Human Endeavour and Science Inquiry Skills are interwoven throughout the SU sub-strands and through a range of inquiry-based activities including experimental testing, field work, conducting surveys, scientific research and using modelling and simulations, students will grow their interest in Science and engagement with relevant socio-scientific issues to become equipped with a skill set necessary for a future world balancing technological advancement and sustainability.

In **Year 9**, the topics covered are:

- Human body responses to its external environment, the interdependencies between biotic and abiotic components of ecosystems, and issues of human impact on biodiversity.
- The notion of the atom as a system of protons, electrons and neutrons, and how this system can change through nuclear decay.
- Rearrangement of matter through chemical change.
- Conservation of matter and energy transfer, and the properties of the electromagnetic spectrum.

Contact

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Health and Physical Education (HPE)

• compulsory

The Year 9 curriculum provides a comprehensive Health and Physical Education program.

The Year 7, 8 and 9 curriculum expands students' knowledge, understanding, and skills that help them achieve successful outcomes in classroom, leisure, social, movement, and online situations. Students learn how to take positive action to enhance their own and others' health, safety and wellbeing. They do this as they examine the nature of their relationships, and the factors that influence people's beliefs, attitudes, opportunities, decisions, behaviours, and actions. The curriculum for Year 7, 8 and 9 supports students to refine a range of specialised knowledge, understanding and skills in relation to their health, safety, wellbeing and movement competence and confidence.

The course supplements the co-curricular sporting program in which all students participate.

The topics and sports covered are:

Year 9 Health

- Loss and grief
- Consent, conception and contraception
- Drug education – Legal prescription and OTC
- Risk awareness and mitigation

Year 9 Physical Education

- Aquatics
- Rowing
- Invasion games
- Striking and fielding games
- Net wall games
- Athletics
- Strength and conditioning
- Life Saving / First Aid

Contact

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Religion, Philosophy and Ethics (RPE)

- compulsory

The teaching of **Religion, Philosophy and Ethics** within Guildford Grammar School supports the purpose and religious foundation of the School through an academically rigorous syllabus concerned with the production of critical thinkers, the promotion of intellectual curiosity and the analysis and appreciation of Christian and other religious values and practice. The subject is taught in an academically rigorous fashion and with the inclusiveness expected of liberal but orthodox Anglican schooling. Compassion, empathy, and service beyond self are integral elements of such education.

From Year 7 to Year 10 all students study a foundational program of Religion, Philosophy and Ethics which concentrates on four interrelated areas of study, ensuring the students have a broad and firm understanding of religious, philosophical, and ethical issues and as such are also well prepared for the Western Australian Certificate of Education Subjects.

In Term 1, students learn about the significance of myths, stories, and parables. In Term 2, they discover and discuss the nature of the relationship between science and religion, including exploration of issues associated with the origins of the Universe and Evolution. In Term 3, an Ethics unit provides an opportunity to investigate questions relating to wealth and poverty throughout the world while in Term 4 students learn about Buddhism, one of six largest world religions.

Contact

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Action Projects

Action Projects are purposeful, problem-based activities designed to engage students in a rich learning experience. These learning projects offer students the opportunity to explore broader applications of their learning and apply new found skills and understanding to relevant, real-life problems and issues. Collaboratively, students will discuss, research, analyse, create and debate problems and issues specific to their project. Rather than being an extension of the curriculum, an Action Project is a medium by which students come to experience and engage with it.

A variety of feedback and assessment methods are used. Self-assessment, reflective writing,

online networking and checklists are used to provide practical advice during the course of the project. The challenge-based nature of each project provides tangible evidence of final performance. Students are encouraged to present their learning in a variety of ways, encouraging their creativity and control over their learning as well as allowing for their different learning styles.

Students will participate in one Action Project each term in either their Science or Humanities and Social Science Core subjects. Across Year 7-9 students will complete 12 Action Projects.

Stagnant Swamp or Wild Wetland (Biological Science)

This project explores the vast and intricate connections and relationships that exist in our natural world.

Through the study of ecology, students explore energy and matter cycles within interrelated living networks.

Collaborating in small groups, students will conduct an environmental impact survey of a natural wetland environment. The goal of the survey is for students to understand that human survival depends on people effectively managing our natural environment.

Thermodynamics (Physical Science)

This project explores the **nature and properties** of energy.

Students learn about energy transfer, particularly the transfer of heat through convection, conduction and radiation. Working in small groups, students conduct a series of experiments to discover that common substances transfer heat at different rates.

Using this knowledge each group then designs and constructs an insulated container to minimise heat loss. These containers are then tested under controlled conditions in class. The project concludes with students producing a report outlining the scientific principles behind their design, evaluating its efficiency, and detailing possible improvements that could be made.

Power Play (Civics & Citizenship)

The public loves to hate them, but there is no denying that the power plays in Australian politics shape our everyday life.

In this Action Project, students will learn about the history and alternatives to democracy. They will develop a democratic process, modelled on the Australian democratic system, concluding with a full mock election based on the platform promoted by their own political party. Students will develop policies, create an innovative campaign and slogan, write a policy platform speech and deliver it before their peers. Through this project, students will explore the current Australian political landscape, discovering the good, the bad and the ugly side of politics.

Students will analyse the campaigns of key political figures and parties to identify persuasive tactics and the nature of the media machine to gain voters support. These components will combine to drive the students' electoral campaign, culminating in a class election.

Through this project, students will:

- Develop their confidence and public speaking skills
- Identify persuasive language and bias in texts
- Discuss concepts of democracy and democratic values
- Describe issues of justice
- Explain their rights and responsibilities as a member of Australian society.

The Guildford ANZAC (History)

Nearly fifty Old Guildfordians died in the **First World War**, while many others fought for their country in the War to End all Wars. Countless young men were killed or wounded, creating a legacy of service and sacrifice for future generations of students at the School.

In this Action Project, students will pay tribute to their Old Guildfordian brothers who fought 100 years ago as recognition of their service. They will study the life of a soldier from Guildford Grammar School that fought in the First World War and place his life into its historical context.

Students will use the resources of the Guildford Grammar School Archives, the Australian War Memorial and the Internet to discover more about every aspect of the life of this soldier: his family, community, school, wartime service, unit and the circumstances of his death. They will also study the major battles and engagements in which the soldier fought and comment on the significance of the soldier and his service.

Lest We Forget.

Year 9 Discovery courses: overview

All students have the opportunity to study **four** optional Discovery courses from the list below, **two in Semester 1 and two in Semester 2**. We try to give as many students their preferred subjects as possible.

Please select online, your choices and reserve subjects for Semesters 1 and 2.

The only exceptions are Languages, which are year-long courses and therefore two of your Discovery courses.

Year 9 Learning Area	Discovery Course Pathways
Arts	Dance Drama Media Music Exploration Visual Art
Health & Physical Education	Sport Science
Languages	Chinese French
Religion, Philosophy & Ethics	The Ethics of Games
Technologies	Computer Science Design for Metal Design for Wood Engineering Studies Graphic Design

The Arts

Dance

Year 9 Dance explores, extends and refines contemporary movement and dance skills. The course focuses on improvisation, composition, working with the elements of dance, choreographic devices and choreographic structures.

Students will develop and extend skills in a range of popular dance techniques such as contemporary, Hip Hop, Jazz and/or Funk to attain greater technical competence in relation to body control, strength, balance and co-ordination. Students are provided with opportunities to present dance to others in informal and formal settings, developing performance skills of expression, projection, focus and greater technical mastery.

Reflective writing tasks are a part of the development of individual response, interpretation and the reflection on the history of dance. Safe dance practices underlie all experiences, as students perform within their own physical capabilities and work safely in groups.

The focus of this course is:

- Develop stylistic techniques including body control, stability, competence, accuracy, placement/ alignment, strength, co-ordination, articulation, endurance, flexibility, movement range and interpretation
- Create an awareness of the elements of dance (BEST-body, space, energy and time)
- Engage with choreographic devices (unison, canon, repetition, abstraction, contrast, motif)
- Understanding and implement choreographic structures (narrative, binary, ternary)
- Engage in regular performance (develop skills in expression, projection, performer/ audience relationship, ensemble awareness, interpretation, musicality).

Drama

This course builds on existing drama skills and contextual knowledge through the practical exploration of different styles and forms of drama as well as refining the student's ability to present drama as an event. It is a dynamic subject that explores a wide range of theatrical forms through extended improvisation, characterisation, play building, scripted Australian or world drama pre-1960, and self-devised performance. Students will extend their physical and vocal performance skills while exploring a wide range of theatrical forms including improvisation, circus skills and scripted performance.

Reflective writing tasks are an inherent aspect of this learning program.

The focus of this Discovery course is:

- Creating and performing dramas based on a given stimulus
- The value and importance of communication techniques
- Improvisation techniques
- Introduction to circus skills
- Skills in structuring drama for performance
- Performance from a scripted scene
- Introduction to performance-duologue
- Drama terminology, reflective writing and introduction to extended answer form.
- Exploration of selected theoretical forms.

Contact

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The Arts

Media

Media follows on directly from the skills developed in the Year 8 Media Arts Core subject. It aims to develop Year 9 students' understandings within this learning area and explores popular entertainment, focusing on game culture.

The course allows students to progress with the knowledge gained in Media Film Production and Media Arts Core to analyse and compare the purpose, style and structure of video games from different times.

Students will develop skills and utilise their awareness of this media form. The unit addresses the specific content of media language, audiences and practical video game development.

Students will learn skills associated with brainstorming ideas, pre-planning, shot composition, framing, producing and editing a game review in post- production.

The focus of this Discovery course is:

- Critical analysis of popular entertainment
- The use of codes and conventions
- The cultural and historical context of film/ video games
- Theoretical approaches to critical analysis
- Ethical discussions around video game addiction
- Exploration of the effect of violence in video games on cultures
- Video production: video game proposal and video review

Music Exploration

This course concentrates on the exploration of music into a variety of contexts and genres. Building on skills gained from the previous courses, Music Exploration will allow students to experiment with composition across a variety of formats, concentrating on specific forms and structures, whilst also studying various designated works from which students can draw conclusions and inspiration. Students will gain an understanding of compositional theory, aural perception, literature analysis and performance. The computer software programs Sibelius, Mixcraft, Auralia and Musition will be used as a fundamental part of the course.

This course is suitable for students who wish to study music in more detail as well as those who are preparing to take on Music as an academic subject in the Senior Years of schooling. The ability to fluently read music and play a musical instrument is strongly desirable in those students wishing to undertake this course of study.

The focus of this Discovery course is:

- Building on the knowledge of the fundamentals of music to understand, analyse and create musical works across a variety of genres and contexts
- Developing aural perception skills to further enhance performance, compositional and analytical abilities.
- Aiding in the development of practical and/or performance skills.

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The Arts

Visual Arts

This course is for those students who have completed previous Core and Discovery level Visual Arts courses and relies on previous knowledge and skills accumulated in these preceding courses. The course work encourages creative and critical thinking and is essential for those thinking of pursuing art further. As with the previous courses, students will create art works responding to a brief and continue to develop their awareness of the historical and social contexts that art works are made in. Independent learning skills such as personal design, decision making, analysis and final shaping of an artwork are a key focus of this unit.

The course focus:

- Creating art works that respond to a brief
- Advancing of arts skills and processes
- An understanding of the significance of art in an historical and social context
- Advancing understanding of appropriate art and design language
- The ability to make refined personal design decisions as they relate to a student's artwork
- Includes a research based project.

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Health & Physical Education

Sports Science

This course further develops knowledge and understanding in the area of Anatomy, Human Physiology, Biomechanics and Sports Psychology.

In this course, students will participate in the theory and practice of sport. While this is not a prerequisite for future study, many students use Sport Science as a foundation for learning in senior secondary learning in Physical Education Studies.

The focus of this Discovery course is:

- Developing physical skills, strategies and tactics – applying strategies and tactics
- Sports Psychology
- Technology in Sport
- Sports Coaching
- Sports Culture and Leadership
- Exercise Physiology – Effects of exercise on the body
- Invasion Games
- Striking and Net games.

Contact

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Languages

Chinese

This course will provide students with the language skills needed to communicate more freely with their peers in China, and will give them deeper inter-cultural understanding. It is suitable for students who have undertaken the Year 8 Chinese course. In Semester 2, this course further strengthens students' language skills needed to communicate more freely with their peers in China, and gives them deeper inter-cultural understanding. :

The focus of this Discovery course is:

- Body: describe body parts
- Food: Chinese and Western food
- Food and health: vegetables, fruits and snacks
- Shopping: things to buy during sale or discount
- Living environment: moving to a new house

French

This course provides students with the language skills needed to communicate more freely with their peers in French-speaking countries and gives them deeper inter-cultural understanding. It is suitable for students who have undertaken the Year 8 French course at Guildford Grammar School, or who have equivalent experience with French.

The focus for the first semester is:

- My house and community: my household chores
- Welcome to Paris: French monuments and visiting France
- My holidays: describe past actions
- My projects: describe a journey

In second semester, this course further strengthens students' language skills and gives them the opportunity to explore the French-speaking communities around the world. It is suitable for students who have completed French Language in Semester 1, Year 9, or who have equivalent experience with French.

The focus for the second semester is:

- Let's go shopping: order in French
- My travel plans: the Francophone world
- My projects: describe a journey

Languages courses must be studied for the whole year.

Contact

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Religion, Philosophy & Ethics

The Ethics of Games

Whether it is a game of football, netball or cricket, a board game or a video game; games are a significant aspect of what it means to be a human person. The types of games we play and the way we play them says something about whom we are and what we value. To some, games are a means to an end, a way of achieving certain goals or outcomes; whether that be to get stronger through training on the sports field, becoming a more tactical thinker by playing chess or relaxing in front of a screen.

For others the benefit comes from the enjoyment one gets out of the game or the sense of achievement in winning. Games raise many interesting ethical questions including doping in sport, cheating, fairness, discrimination, the use of and portrayal of violence in sports games and video games, the commercialisation of sports and games and many more. This course seeks to address some of these ethical issues through the study of ethics. The study of Ethics (moral philosophy) is the branch of philosophy that involves systematizing, defending and recommending concepts of right and wrong conduct. This branch of philosophy can be applied to any field of study including Medical Ethics, Business Ethics, Professional Ethics to name but a few.

The focus of this course is:

- Introducing students to the study of ethics and exploring definitions and meanings of games.
- Presenting fundamental ethical frameworks such as utilitarianism, deontology, and virtue theory.
- Exploring, discussing, analysing and critically evaluating a series of ethical issues that relate to games primarily from the player's perspective but also from that of the audience/supporters.
- Examples, as suggested above, may include doping in sport, cheating, fairness, discrimination, the use of and portrayal of violence in sports games and video games or the commercialisation of sports and games.
- Using a variety of stimuli, mostly current media articles and sources, students explore these issues and to gain an in-depth understanding and be able to reflect on their own experiences and how these may be resolved and approached in the future.

Contact

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Technologies

Computer Science

Welcome to the fascinating world of Computer Science! In this course, you will embark on a journey to explore the realms of programming, computing skills, databases, and game development. You will have the opportunity to apply your knowledge and skills to real-world scenarios, fostering creativity and critical thinking.

By the end of the course, you will have developed a sound foundation in computer science, equipped with essential programming skills, an understanding of computing systems, database management techniques, game development expertise, and web-based technology knowledge.

Basic Programming: Learn how to write code using a variety of programming languages. Gain hands-on experience in problem-solving through coding exercises and projects.

Computing Skills: Learn about computer hardware and software components, operating systems, networks, and internet protocols. Develop proficiency in using productivity tools and applications for effective data management, communication, and collaboration.

Databases: Learn how to design, create, and query databases using structured query language (SQL). Explore concepts such as tables, relationships, normalization, and data manipulation.

Game Development: Unleash your creativity and delve into the use of game development software, such as Godot or Unity, to create interactive and engaging games. Develop skills in designing game levels, implementing game mechanics, and scripting interactive elements.

Web-Based Technologies: Acquire skills in HTML, CSS, and JavaScript to design and develop user-friendly web pages. Discover the concepts of client-server communication, responsive design, and web application development.

Contact

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Technologies

Design for Metal

Welcome to the dynamic world of Metalwork! This course offers you a range of exciting creative and practical experiences, allowing you to explore the art of shaping and manipulating metal. Through hands-on projects and skill-building exercises, you will develop the knowledge and capabilities needed to excel in metal design and fabrication. Throughout the course, you will undertake a series of practical projects, including the creation of a sheet metal BBQ or toolbox and a multi-material furniture piece. These projects will provide you with opportunities to apply your skills, showcase your craftsmanship, and demonstrate your ability to meet design specifications.

By the end of the course, you will have developed a strong foundation in metalwork techniques, design thinking, and multi-material integration. You will be equipped with the knowledge and skills necessary to pursue independent metalwork projects, express your creativity, and contribute to the ever-evolving world of metal design and fabrication.

Materials, Tools, and Techniques: Develop a comprehensive understanding of metal materials, their properties, and appropriate uses. Learn to work with various types of metals, including sheet metal, and explore techniques for cutting, shaping, and joining metal pieces.

Design and Innovation: Engage in design projects that challenge you to think critically and develop innovative solutions. Learn to generate design concepts, create technical drawings, and refine your ideas to meet specific requirements.

Fabrication and Assembly: Develop skills in cutting, bending, welding, and joining metal pieces together to create functional and aesthetically pleasing structures.

Learn techniques for precise measurement, marking, and fitting during the assembly process.

Multi-Material Integration: Explore the integration of wood, plastic, or other materials to create unique pieces of furniture or functional objects. Learn how to combine different materials harmoniously while considering their properties and compatibility.

Machining and Fitting: Gain experience in small-scale machining and fitting projects. Develop skills in operating metalworking machinery such as lathes, mills, and drill presses. Learn precision techniques for machining metal components and fitting them together accurately.

Surface Finishing: Discover various surface finishing techniques for metal, including polishing, grinding, and painting. Explore options for corrosion protection and decorative treatments. Learn to apply appropriate surface treatments that enhance the appearance and durability of your metalwork creations.

Environmental and Ethical Considerations: Explore the relationship between technology, individual and societal needs, and the environment. Gain awareness of sustainable practices in woodworking, such as using reclaimed or responsibly sourced wood, minimizing waste, and reducing environmental impact.

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Technologies

Design for Wood

Welcome to the exciting world of Woodwork! This course offers a diverse range of creative and practical experiences, empowering you to explore the realms of design and manufacturing using wood as your medium. Throughout the course, you will undertake a series of practical projects that allow you to apply and showcase your skills. These projects will range from functional items like lamps and jewelry boxes to creative and innovative pieces that reflect your individuality and craftsmanship.

By the end of the course, you will have developed a strong foundation in woodworking techniques, design thinking, and digital manufacturing. You will be equipped with the knowledge and skills necessary to pursue independent projects, express your creativity, and make a positive impact in the world of woodwork.

Materials, Tools, and Techniques: Gain a comprehensive understanding of different types of wood, their properties, and appropriate uses. Learn how to select and handle materials safely and effectively. Explore a variety of tools and equipment commonly found in both industrial and domestic settings, and master essential woodworking techniques.

Design and Innovation: Develop your design thinking and creativity by engaging in design projects that challenge your problem-solving skills. Learn to generate and refine design concepts, considering both functionality and aesthetics. Embrace innovation as you push the boundaries of traditional woodworking.

CAD Software and Digital Manufacturing: Acquire foundational skills in computer-aided design (CAD) software, which will enable you to translate your design ideas into precise digital models. Explore the integration of digital technologies with woodworking, such as CNC routers and laser cutters, to enhance your manufacturing capabilities.

Construction and Assembly: Learn the art of constructing and assembling wooden structures. Develop techniques for joinery, such as mortise and tenon, dovetail, and lap joints, to create sturdy and visually appealing pieces. Understand the importance of accurate measuring, marking, and fitting during the construction process.

Finishing: Discover various finishing techniques that enhance the natural beauty of wood. Learn how to apply stains, varnishes, and protective coatings to achieve desired outcomes. Develop an understanding of surface treatment options, including carving, engraving, and inlay work.

Environmental and Ethical Considerations: Explore the relationship between technology, individual and societal needs, and the environment. Gain awareness of sustainable practices in woodworking, such as using reclaimed or responsibly sourced wood, minimizing waste, and reducing environmental impact.

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Technologies

Engineering Studies

Welcome to the exciting world of **Engineering Studies**! In this course, you will have the opportunity to explore the field of engineering and its associated industries while emphasizing practical experiences. Throughout the course, you will undertake a significant project: designing and developing an automated marble sorting machine using Arduino, flowchart programming, and discrete DC components. This project represents a real-world material handling system and will provide you with the necessary skills to develop an open project in Year 12 that aligns with a real-world need or opportunity, centered around sustainability.

By the end of the course, you will have gained practical experience in various engineering disciplines, problem-solving skills, and the ability to design and create innovative solutions. You will be prepared to tackle complex engineering challenges and contribute to a sustainable future through your understanding of structures, mechanisms, control systems, electronics, and alternative energy sources.

Structures and Mechanisms: Develop a solid foundation in the principles of structures and mechanisms. Learn about different types of structures, their properties, and their applications. Explore the functionality of various mechanical systems, such as gears, levers, and linkages, and understand their roles in creating efficient and reliable machines.

Control Systems: Dive into the world of control systems, where you will learn how to design, analyze, and optimize systems for automation and regulation. Understand the concepts of feedback control and develop skills in programming microcontrollers, such as Arduino, to control and monitor the behavior of machines and devices.

Electronics: Acquire knowledge and skills in electronic components and circuits. Learn about discrete DC components, such as resistors, capacitors, and transistors, and their applications in engineering projects. Gain hands-on experience in soldering, circuit assembly, and troubleshooting.

Alternative Energy: Explore the fascinating realm of alternative energy sources and their role in sustainable engineering. Investigate renewable energy systems, such as solar panels and wind turbines, and understand their principles of operation. Learn how to integrate alternative energy solutions into engineering projects for a sustainable future.

Robotics Projects: Engage in robotics projects that allow you to apply your knowledge of structures, mechanisms, control systems, and electronics. Develop skills in programming robotic systems and explore the exciting possibilities of automation and artificial intelligence in engineering applications.

Engineering Studies opens the door to a world of possibilities, where your creativity, technical skills, and passion for making a difference can shape the future of engineering and its associated industries.

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Technologies

Graphic Design

Welcome to Graphic Design, an inspiring journey that invites you to delve into the captivating world of visual communication and creativity. In this course, you will immerse yourself in the art of graphic design, learning to convey ideas, emotions, and messages through compelling visuals. Graphic Design is your gateway to understanding the power of visual storytelling and its impact on our modern world. Through a combination of theory and hands-on projects, you will develop essential graphic design skills and explore the various ways design shapes our visual culture.

By the end of this course, you will have gained a strong foundation in graphic design principles and practices. You will be equipped with the skills to create visually compelling designs and a deeper understanding of how design shapes the world around us. Whether you are interested in pursuing a career in design or simply want to develop your creative skills, Exploring Graphic Design will empower you to communicate ideas visually and make your mark in the world of design.

The Language of Visual Communication: Discover the language of design and its role in effectively communicating ideas. Explore the principles of design, including balance, contrast, alignment, and more, that influence the creation of impactful visuals.

Exploring Design Styles: Dive into the diverse world of design styles and trends. From minimalism to maximalism, vintage to futuristic, you will analyze and experiment with various styles to develop your unique design aesthetic.

Graphic Design Tools and Software: Develop proficiency in industry-standard graphic design software. Learn to use tools like Adobe Photoshop, Illustrator, and more to bring your creative visions to life on the screen.

Typography and Layout: Explore the art of typography and layout design. Understand how font choices, hierarchy, and layout composition contribute to the readability and visual appeal of your designs.

Visual Storytelling: Unleash the power of storytelling through visuals. Learn how to create designs that engage and captivate audiences, conveying narratives and emotions effectively.

Ethical and Responsible Design: Consider the ethical and social aspects of graphic design. Explore topics like visual manipulation, cultural sensitivity, and the responsibility of designers to create ethical and inclusive visuals.

Practical Projects: Apply your learning to real-world projects. Design logos, posters, digital banners, and more, honing your skills and creating a portfolio of work that showcases your growth and creativity.

Graphic Design in Society: Reflect on the impact of graphic design in our daily lives, from advertising to branding, and how it influences our perceptions, decisions, and behaviors.

Contact

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