**Friday Morning Workshops**

1. **Graphical Solution Zealotry**

**Presenter** - Paul Copeland

**Target Audience: Stage 6 Engineering Studies Teachers**

Applying the Three Force Rule to the HSC: Years of teaching Engineering has shown me that students will avoid graphical solutions and the three force rule unless you explicitly teach those concepts and demonstrate the advantage of them. But do you feel comfortable doing that? Come along and hear me wax lyrical (and at length) about my love of graphical solutions with selected past HSC questions or HSC style questions being used to demonstrate how to use graphical solutions and importantly how to show students why they are advantageous.

1. **STEM Coding/Engineering/Renewable Energy/Drone Piloting**

**Presenter -** Karen Stuttle, HT TAS @ Canowindra High School

**Target Audience** - Stage 3 – Stage 4 coding teachers, STEM and/or G&Ts teachers, teachers with beginner knowledge in coding or those who wish to walk away with a full program for a combined STEM Coding/Engineering/Renewable Energy/Drone Piloting design focus. Emphasis on getting teachers feeling positive and comfortable about re-igniting code and STEM learning at their school.

Goodies bag includes:

* Full semesterised program for a unique, tailor-made unit of work that encompasses the High Potential Gifted Education Policy approach to encourage future entrepreneurs who are coached to build strong city and rural communities.
* Unit of work introduces AppLab and Micro:bit for a VMS portable emergency board and focuses student energy in designing a user-friendly App that solves a community crisis, significant weather event or community emergency.
* The 2nd term unit then takes an engineering focus, building solar panelled boats, learning about circuits and harnessing renewables.
* All throughout, students also gain an understanding of CASA laws surrounding the use of drones, utilising a great App that records their flights. Students acquire their CASA school-based drone licence.
* Exclusive lesson plan on a drone scavenger hunt assessment
* Teachers get a complete breakdown of suppliers for the equipment and where to source for each project.
* Video footage shown in the workshop of successful solar boats by 12 year olds
* Join the Canowindra Shared Teacher Google Classroom Community to continue getting help.
* Screencastifys library to help teachers get started and build their subject ready for 2025.
1. **Puppetry - Inside a puppet- the secret sauce of making puppets with an Industry Experienced Puppet Maker - An overview of the 10 hour HoT Weekend’ course**

**Presenter:** Katherine Hannaford

**Target Audience –** Teachers ofD&T, HPGT, Stage 4 Technology, anyone interested in learning about making puppets.

Puppet Building- a magical conjunction of timber, textiles, and rapid prototyping.

Find out more information about what to expect from the 10 hour workshop where participants will build their own hand and rod puppet (also known as Muppet Style) from scratch that they get to take back to school.

This workshop is ideal for teachers looking at how multiple Technologies domains can be combined into one project. Teachers will use wood, foam, fleece, and 3D printed parts to build their own unique puppet. All materials required for this workshop are provided, and even if you have never sewn a stitch in your life, it is not a barrier to making a puppet. About your instructor: Katherine Hannaford is not only the Teacher Librarian and STEM coordinator at Macquarie Fields High School, she is also a professional puppet builder for Stage and Television for 20 years. Most recently, Katherine fabricated the puppets used on the 2021 ABC iView campaign seen on ABCTV, internet ads, billboards, buses, as well as puppets for the 2017 Schools Spectacular, and developed a Board Endorsed Course in Puppetry in 2016.

1. **Creating custom-built interactive simulators for your students using github pages (using Chatgpt).**

**Presenter -** Adam Weber Penrith Anglican School

**Target audience** - teachers of Tech Mandatory & Engineering Studies, iSTEM, Computing and Technology, Enterprise Computing, Software Engineering, IST, SDD, IPT.

Teaching technologies is always exhilarating, until we encounter the more abstract aspects and deep theory, such as TCP/IP, encryption, and Machine Learning. However, you can utilise ChatGPT to create interactive simulators for your students.

Don't wait for resources; learn how to construct engaging and interactive simulators and how to integrate them into your LMS using GitHub Pages. Ignite your students' curiosity and foster a deeper understanding of the world around them.

Join us and enhance your teaching with cutting-edge AI technology!

1. **Maximising Marks in the HSC Industrial Technology Folio**

**Presenter** - Mark Tyler - DoE

**Target Audience -** Stage 6 Industrial Technology Teachers

How can you support students to achieve their potential in the Industrial Technology Major Project?

The presenter will share knowledge of HSC marking procedures collected over many years through roles as classroom teachers, Curriculum Advisors, Supervisor of Marking and NESA Inspector.

This workshop will explore strategies to improve the marks awarded for HSC Industrial Technology Major Projects by:

* developing a deeper understanding of the HSC marking guidelines including how they are applied when marking projects
* unpacking how the Folio impacts upon Production marks
* providing examples of how projects might be enhanced to achieve higher production marks
* exploring how projects can still be made well without becoming too demanding for students.
1. **AI and Educhat**

**Presenter -** Dan Hart - DoE

**Target Audience -**

Explore the use of AI and EDUCHAT at the NSW Department of Education, discover how it works, and classroom applications.

1. **Project Selection for Enhanced Learning in Industrial Technology Stage 5**

**Presenter** - Alex Stewart - DoE

**Target Audience -** Stage 5 Industrial Technology Teachers

1. **A safer Way to use Craft Epoxy Resins**

**Art & Coating Resins Tips and Tricks Session**

**Presenter** - Dave Giddings - The Epoxy Guru BoatCraftNSW

This is a TechExpo Workshop

Have you always wanted to know **the** Tips & Tricks of playing with Art & Coating Epoxy Resins? Want to know how to get rid of those pesky air bubbles in pour on finishes? Or, how to stop the colours merging when playing with Epoxy Resin? If this is you, then check out this Craft Epoxy Resins Overview of the HOT’s workshop.

During this Break Out session Dave will show you how to do a Coating and Art resin pour. Allow Dave to introduce you to achieving high gloss finishes. This will give you an overview of the fun projects you would achieve if you do a HOT’s on “Playing with Recycled timber and More” Workshop and ideas to take back to your classroom.

Dave will take you through the safest practices for using the correct craft epoxy resin for different applications. He will provide you with an overview of how to set up your workspace to eliminate epoxy resin ending up everywhere. By doing this Briefing / workshop, you will understand the full program covered in the ‘Hands on Technology’ Workshop on “Playing with Recycled timber and More”. It includes using modern technology epoxies for the classroom and complete your own projects in the future.

You will be given information on Modern Technology chemicals and why you should not allow old technology chemicals into your classroom. The briefing is based on the Australian developed and manufactured Luci Clear modern technology Casting, Art and Coating Epoxy resins. You will be shown how you or your students can take very ordinary pieces of recycled and new timber and turn them into one off masterpieces.

1. **Join us for an exploration into crafting the fundamental Kumiko Asa-no-ha pattern.**

**Presenters - Timberbits**

This is a TechExpo Workshop

Whether you’re a seasoned woodworker or just starting out, this workshop demonstration promises to be an enlightening journey into the world of Kumiko. In this 60-minute session, we’ll delve into the essential tools and jigs required, breaking down the process into 5 simple steps to guide you through your Kumiko endeavour.



Whether you're looking to introduce your students to this captivating art form or embark

on your own Kumiko journey, this workshop is designed to equip you with the

foundational knowledge and skills to get started.

1. **ARTEC WORKSHOPS**

These will be decided by the ARTEC Team as information comes to hand closer to the conference. iTE members are welcome to join these workshops.

**Friday afternoon workshops**

1. **An Amalgam of Alloys**

**Presenter** - Paul Copeland

**Target Audience: Stage 6 Engineering Studies Teachers**

Let’s discuss some facts about alloys, their terms, types and structures. Then lets’s chart a course through this diverse by focussing on the key alloys relevant to the HSC engineering course. We will discuss steels, cast irons, aluminium alloys, copper alloys, titanium alloys and then as a special treat we will discuss the nickel superalloys. Anything called a super alloy has to be cool! It will be fast, it will be full on, but helpfully enrich your knowledge a little bit more in an area that is hugely diverse but also very important to engineering.

1. **STEM at Macquarie Fields High School running in addition to Technology Mandatory - A** **5 year journey**

**Presenter -** Katherine Hannaford Teacher Librarian/ STEM Coordinator, Macquarie Fields High School

**Target Audience** - Stages 3 & 4 STEM Teachers, Stage 4 Technology Mandatory Teachers.

Participants will gain an understanding of how STEM is run at Macquarie Fields HS where all Year 8 students complete a 100 hour STEM program in addition to the Technology

course.

STEM @ MFHS has been running since 2018. This presentation is for anyone interested in how a STEM program works in a Stage 4 high school setting and is looking for ideas for setting up a STEM unit or program. The presentation will outline the units we currently teach, how the program follows on from the Stage 4 Mandatory Technology program, and flows into Stage 5 Design & Technology, Industrial Technology - Engineering, and Graphics Technology. The presentation will also go into how we resource the units and discuss the partnership we have formed with the CSIRO for the GenerationSTEM program.

1. **Creating python ChatGPT AI chatbots**

**Presenter:** Adam Weber - Penrith Anglican School

**Target Audience:** Teachers of Computing and Technology, Enterprise Computing, Software Engineering, IST, SDD, IPT.

Step into the world of AI with our ChatGPT chatbot creation workshop and inspire your students! Learn how to connect to the ChatGPT API, craft effective prompts, and gain practical knowledge to implement chatgpt projects in your classroom.

This course is ideal for individuals with basic to intermediate Python skills and will cover:

Establishing a connection to the ChatGPT API

Structuring questions, answers, and feedback for an engaging learning experience

Prompt engineering.

Join us and enhance your teaching with cutting-edge AI technology!

1. **Onshape - An Overview of Wednesday’s HoT workshop**

**Presenter:** Murray Arniston – Killara High School

**Target Audience:** Teachers interested in FREE cloud-native CAD platform

Did you miss Wednesday’s detailed ‘Hands On’ course, yet you would like to know what was covered?

This workshop will outline what was covered on Wednesday as well as in the in the 10 hour HoT weekend workshop.

“Onshape is a professional-grade, cloud-native CAD platform that students and educators can access for FREE on any device, anywhere, anytime.” It is cloud-based platform that works on both Mac and PC.

1. **Excursions for TAS.**

**Presenter:** TBA - DoE

**Target Audience:**

What types of excursions are successful, cost effective and how to organise them.

1. **Safety in TAS.**

**Presenter:** Mark Tyler - DoE

**Target Audience:** All TAS teachers who deliver practical subjects in workshops and kitchens

A preview of new DoE safety resources to support teaching with an update on safety policy and equipment.

1. **Creating a Robotics Program to engage students**

**Presenter** - Fiona Donnelly – Granville Boys High School

Learn how a robotics program has engaged students and turned around an underperforming school.

1. **Mechatronics 7–10 Computing Technology - An overview of the Wednesday 6 hour HoT workshop and the 10 hour HoT Weekend’ course.**

Did you miss Wednesday’s detailed ‘Hands On’ course, yet you would like to know what was covered?

This workshop will outline what was covered on Wednesday as well as in the in the 10 hour HoT weekend workshop.

1. **A teachers guide to Implementing Virtual Reality - Use case 1 & 2 - Viewing and Creating VR Projects**

**Presented -** Rosanna Cotino and edgedVR team

This is a TechExpo Workshop

**Target audience:** Stage 4, 5 & 6 Teachers of STEM, TAS, IT, IST, Digital Technologies, Design and Tech, Multimedia

By engaging in this workshop, participants will learn: Understand the different use cases of how Virtual Reality could apply to your school and classroom teachings.

* How to use VR as a powerful digital learning technology in the classroom
* Understand VR STEM learning tasks using version 9 of the Australian Curriculum – Digital Technologies and Design and Technology
* How to use 'pre-made' VR content as classroom based teaching
* Understand how immersive VR can be used practically and powerfully to engage students in cases of authentic inquiry and VR creation.
* Learn about 'self-created' content - 360 images, 360 Video, plus Multimedia files - in the design, production and evaluation of an immersive VR experience

This is an information session for teachers that want to implement VRCreate in the classroom. Following on teachers can sign up for VRCreate NESA accreditation course.

**VRCreate course:**

Hands-on work to develop the overall learning design mapped to timetable, curriculum, workflow and learning outcomes. How to Apply the 5-step framework - Idea, Collaborate, Create Content, Build in VR and Share. Plan the topics and concepts, design a storyboard, student roles and activities, creating content, rules for design when creating VR projects.

**Option purchase**:

**Special package for workshop attendees only: $4999**

* X3 Headsets with a full interactive library of STEM content modules in offline mode for whole school access.
* X10 VRCreate software licenses for 10 devices (perfect for a computer / STEM / Innovation room) allows access for whole school.
1. **ARTEC WORKSHOPS**

These will be decided by the ARTEC Team as information comes to hand closer to the conference. iTE members are welcome to join these workshops.