

# Learning Labs Workshops

**JULY 2018**



UNIVERSITY  
OF WOLLONGONG  
AUSTRALIA

Outreach & Pathways

## YEARS 7 & 8 WORKSHOPS

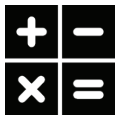


### Digging up the Past

*Presenter: Courtney Mitchell*

The past isn't gone; its traces are all around us. If this peaks your interest, this workshop is for you!

Source analysis, teamwork and practical archaeological skills are the basis of this workshop. Encounter ancient artefacts and participate in a mock excavation. Over two days you'll become a competent amateur archaeologist who is able to offer amazing insights into ancient civilisations.



### Mathematic Investigations

*Presenter: Nilesh Vyas*

In this exciting hands-on session, you will work on your problem solving skills, reasoning and functionality. You will be working both independently and as part of a small team in the art of mathematical modelling. You will be involved in spotting patterns, formulate and test your ideas.

This workshop is designed to improve your mathematical communication and critical skills. There will be room for extension and enrichment via utilizing your higher-order thinking skills. There will be time for reflection and your facilitator will guide you. So see you there on the day with your scientific calculator!



### Rules vs Laws

*Presenter: Supriya Eliezer*

This workshop introduces foundational concepts in law, such as, rules versus laws, contracts, and dispute resolution using fun, lively and engaging activities. Why are rules and laws important and what is the difference between them? We will draw on and debate examples from everyday experiences. Is it possible to have a game without rules, why do we need to wear a seat belt, what are consequences of not wearing one? Contracts affect many aspects of our lives too. How are these contracts created and come into effect? Does a contract need to be signed? We will learn to negotiate rights and obligations and draft a contract. Finally, what happens when things go wrong? How do parties settle their disputes? This is where the courts and the justice system come in.



### On the Wild Side

*Presenter: David Wassink*

Have you ever watched a wildlife documentary and wondered how they put it all together? Wildlife documentaries have been made since the earliest days of film and television and there is a lot of precise planning and editing that makes them so effective. Students in this workshop will analyse the techniques used in wildlife documentaries. They will then work in groups to plan, film and edit their own short documentaries about a randomly-assigned subject. Students will need to bring their own camera/iPad/device, along with its USB connector to upload videos to university computers. David Attenborough impressions are welcome, but not required!



### Intro to Virtual Reality Development

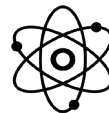
*Presenters: 'Devika'*

In this workshop we will be using 'Unity' on PC computers to create a virtual world of the students design and allow them to take their first step into using this technology. Students will work individually and collaboratively to enhance their skills and to learn vital skills of working as a team, coding, level design and much more.

By the end of this workshop you will have a good understanding of how VR is relevant today, the basics of Unity and how to build a VR project using the skills they just learnt. You will get the opportunity to briefly interact with a VR headset but the focus of this workshop is on developing content which is done through Unity.

Virtual Reality is a booming high tech industry for 'human computer interfacing'. We now have the ability to create worlds of our imagination and transport ourselves and others into them.

Devika is a collaboration of technology start-ups with global and social ambitions. Our aim is to add value to the lives around us and be a part of a better future by capitalising on emerging technologies. <https://devika.com.au/>



### Mythbusting Physics

*Presenters: James Archer*

Are you interested in what physics is and how it influences our everyday life? Have you seen things in movies that you suspect are impossible?

Starting with some movie clips, this workshop will look at common misconceptions and physical impossibilities, before getting to grips with the real physics. You will carry out experiments and take part in demonstrations, learn fundamental physics concepts, and work out what the movies ought to have shown.

This very hands-on workshop will focus on two key areas of physics - mechanics and waves. It will help you begin an exciting journey developing the tools necessary to debunk common myths in our society today.



### The Great Debate

*Presenter: Shalla Kang*

Do you want to learn to duel with words? To engage in a battle of wits and construct clever arguments? Then debating is for you.

In this workshop you will build on your public speaking and debating skills, learn how to put together a debating model, create clever arguments and shut down your opposition with witty rebuttal. You will also learn about the role of each speaker in a debate and the way debates are structured. You will learn to speak with passion and persuasion.

You will learn to enjoy working as part of a team where everyone contributes ideas and you will learn the sportsmanship of debating, where the most important thing is not winning but the enjoyment and intellectual stimulation of a great argument.



### How Far Would You Go To Make a Profit?

*Presenters: Natalie Akmacic*

In today's globalised environment, decision-making for companies is extremely complex, with leaders often torn between profit maximisation and their responsibility to their workers, society and the environment. In this workshop, you become part of a senior management team operating a smartphone manufacturing computer simulated business.

You will learn; To create a strategy for your company The interdependencies of business decision-making by hiring staff, firing staff, paying wages, choosing suppliers, working out pollution levels for your factories, advertising spending, community donations and more.....To measure your key performance indicators on quality, reputation, productivity and profit To engage in corruption or not and the impacts of this decision! The effects of child labour on your business, and argue the issue of whether or not ethics and/or CSR exist in business?

The cases discussed and simulated learning activities will benefit those undertaking 'Business Studies' in Year 11/12.



### Ocean Engineering

*Presenter: Ashley Heath (UOWEIS)*

Do you like designing and building? Do like being around water or the ocean? Well this workshop is for you.

In this workshop you'll be working in small groups to designing and build from scratch a remote controlled sailing vessel to carry cargo in a simulated ocean generated by the Universities wave maker. This is an important mission, seeing as 90% of all container goods are moved by ship. But don't worry, we will give you the engineering skills needed to design a sturdy vessel.

In this lab you will learn about the engineering method, hydrodynamics, hydrofoils, structural resonance, balancing forces and torques, wave dynamics and the ocean environments. And naturally you will also have a lot of fun.



### The Writing Journey

*Presenter: Helena Fox Dunan*

How do you get from the beginning to the end of story? Explore the writing journey, from creation to completion, through a series of fun and engaging writing prompts. We will see what it takes to start a story (is it magic, logic or both?), what is inside a story—character, plot, setting, voice and dialogue—and we will look at tips and tricks for editing. Along the way, there will be multiple opportunities to share work and receive feedback, all in a relaxed and supportive environment.



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### Physics - Designing Energy Efficient Buildings

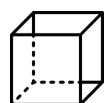
*Presenter: Lorna Jarrett, School of Physics, Faculty of Engineering and Information Science*

Are you a keen physics student who wants to go beyond the school syllabus to apply physics to today's real-world problems?

We all need buildings to live, learn and work in - but do our houses, offices and schools have to consume huge amounts of energy in order to be the right temperature, functional and well-lit? Can we save energy without sacrificing our comfort?

In this workshop you will learn the fundamental principles of thermodynamics - one of the three foundations of classical physics. Using computer modelling, hands-on experiments and small-scale models, you will apply these to the problem of keeping buildings cool in summer and warm in winter - while minimising energy use. We will be working at both Wollongong and Innovation campus. Transport will be provided.

## YEARS 7-10 WORKSHOPS



### 3D Printing & CAD Modelling

*Presenters: Ben & Heike Roberts, Modfab Pty*

3D printing is one of the fastest growing technologies in the world. Have you ever dreamed up an idea or product but not known how to make it real? Participants in this workshop can begin their journey towards becoming designers, makers and entrepreneurs.

After this hands-on workshop you will be aware of how to:

- Operate a generic FDM (fused deposition modelling) 3D printer
- Prepare models to print with slicing software
- Learn how to troubleshoot your prints
- Bring your own designs to life using free CAD software
- Engage in project based learning and use critical thinking skills
- Create your own name tag, and design & 3D print a solution to a problem!
- Create your own 3D Printed Tic Tac Dispenser.

If we don't get the time to print all of the students work during the sessions, Modfab will produce them and mail them out to you.



### #Fitspo- Inspiring a Happy, Healthy You!

*Presenter: Dr Hassan Hosseinzadeh*

If you are interested in a career in health and behavioural sciences or just living a healthy and happy life, then this is the right workshop for you. This workshop will provide you with the knowledge, skill and confidence to build and maintain healthy behaviours. The workshop covers health beliefs, quality of life, healthy eating, health care literacy, health communication, physical activity literacy and oral health.

You will also learn how health promoting knowledge and skills empower behaviour-oriented health communication, influence individual lifestyle decisions, raise awareness of the determinants of health, and encourage individual actions leading to a modification of these determinants.



### #PopCulture

*Presenter: Kai So*

Ever wondered why the news is presented in certain ways? Or why Taylor Swift decided to delete all her social media posts before the release of her album Reputation (2017)? Or the popularity of KPop superstars BTS?

This two-day workshop examines the concept of framing and how culture affects entertainment products in Western media (Australia and Hollywood) and East Asia (China, Japan and Korea).

The first day investigates why news stories are published in various angles and how celebrities frame their public image on social media, which will then lead to the exploration of the #selfie phenomenon. On the second day, participants will examine East Asian popular culture and the cultural differences present in East Asian entertainment products in comparison to the West