UNIVERSITY
OF WOLLONGONG
AUSTRALIA

Outreach & Pathways

MINI Learning Labs Workshops

JANUARY 2018

Arduino from the Start

Presenter: John Kennedy

Have you ever wanted your own robot? Do you wonder how robots avoid each other? Have you ever wanted to learn 'real code' that can run independently of your PC? Then come and learn how to code with Arduinos.

No experience with coding or robotics is necessary, but by the end of this one day workshop you will have built a robot that senses its own world and reacts to the very movements of your hand.

At the end of this workshop there is an option to take home the kit that you have built. This will be an additional fee of $30 and can be arranged on the day. There is scope to use your kit at home and make additional modifications.

Physics in your Body- Exploring Biomedical Physics

Presenter: Lorna Jarrett

In this workshop, we'll be experimenting on ourselves!

Physics is all about forces, waves, electricity and energy - and all of these can be found in your body! How do your eyes work, and how can glasses help people with vision problems? How do we see in colour? What's colour-blindness and how can physics help colourblind people? How do we hear different kids of sounds? How do our skeleton and muscles work together to hold us up and make us move, and how much force do our muscles really exert? You may be surprised!

This workshop is a must for anyone who's interested in medicine or physiotherapy, as well as physicists who want to find out more about practical applications of physics - really close to home!

The Body in Motion: Biomechanics

Presenter: Diane Harland

Learning by doing. During this workshop, participants will be involved in a number of practical activities. We will apply the concepts of mechanics to understand human movement and some of the different ways to measure human movement. We will investigate the who, what, why and how of physical performance.

The concepts explored will include: balance and stability, laws of motion, friction, rebound, swimming and floating, projecting objects, walking and running and a variety of sports skills analysis.

Participants will also be challenged to consider complications that may threaten efficient motion, how to identify these and how they happen. Please bring along some swimmers and a towel if you are keen to jump into the campus pool for an experiment (this is NOT a mandatory requirement of this workshop).

Let's Get Physical

Presenter: SMAH Faculty (UOW)

If you are interested in the field of sports science and/or medicine then this a great introduction for you.

In this workshop, we will explore how the physiological systems of the body act together to allow us to exercise. The workshop will briefly cover basic theoretical knowledge of anatomy, physiology and biomechanics and apply it to exercise. Within the work shop, students will be given the opportunity to enter the anatomy laboratory and learn how to identify specific anatomical structures including bones, muscles and nerves that are responsible for generating movement.

Students will also be exposed to the physiological measurements such as muscle activity, heart rate and force produced and how these measurements can be used to quantify physical performance.

Soft Tissue Depths & the Human Skull

Presenter: Meagan Powley

This workshop is an intensive, hands on experience applying facial soft depths following best practice in forensic identification.

Working in pairs you will identify landmarks on a unique replica skull and then apply each of the soft tissue depths appropriately, all the while learning about the different methods, data bases and their reliability in a forensic case.

Meagan is a Research Associate collaborating with Dr Susan Hayes, UOW's facial anthropologist, in the area of facial approximation and human identification. After this workshop you will never look at a person's face the same way again!