



### Invitation to CHES Masterclasses - Term 2

The Centre for Higher Education Studies (CHES) has been established to offer extension and enrichment opportunities for high-achieving students in Years 10, 11 and 12 and we hold masterclasses in our state-of-the-art auditorium, both online and on-site. These masterclasses are not only available to students enrolled in a CHES subject (VCE subject, Higher Education Study or Year 10 elective) but also to students in government schools across Victoria who are interested in these advanced topics. There is no cost for the masterclasses, but pre-registration is essential.

We invite students to join these upcoming masterclasses through the CHES. The masterclasses are interactive one-hour sessions with leading university academics and industry experts in the areas of advanced technologies and solutions for significant problems we face around the world, with opportunities for students to find out more about these important fields of work and research, including research and technology in terms of large-scale agriculture, space science, cybersecurity, and strategies to address climate change and food production for a growing world population.

Students are welcome to choose which masterclass to attend and all masterclasses are available to students across Victoria both online via zoom and on-site at CHES with opportunities for Q&A whether online or onsite. Students who join on-site will be supervised by CHES staff.

These are the first four workshops in our series of enrichment masterclasses. To register attendance at one or more of these masterclasses, please go to our short registration form here, and select which masterclass or masterclasses you will attend:

[Registration form for CHES masterclasses Term 2](#)

Masterclass 1	<b>Microsoft Guest Presenter</b>	<b>26 APR 2024</b> Friday 2:30PM - 3:30PM	Dr Ian Hoyle Microsoft Cybersecurity
Masterclass 2	<b>Artificial Intelligence implemented in Agriculture and Food for Earth and Space applications</b>	<b>2 MAY 2024</b> Thursday 6:00PM - 7:00PM	Prof Sigfredo Augusto Fuentes Jara University of Melbourne
Masterclass 3	<b>Transdisciplinary skillset for future food systems</b>	<b>14 MAY 2024</b> Tuesday 6:00PM - 7:00PM	Prof Ros Gall, A/Prof Ian Bland and Dr Peta Taylor University of Melbourne
Masterclass 4	<b>Advanced Searching Algorithms</b>	<b>19 JUL 2024</b> Friday 60mins TBC	Prof Sebastian Sardina RMIT University



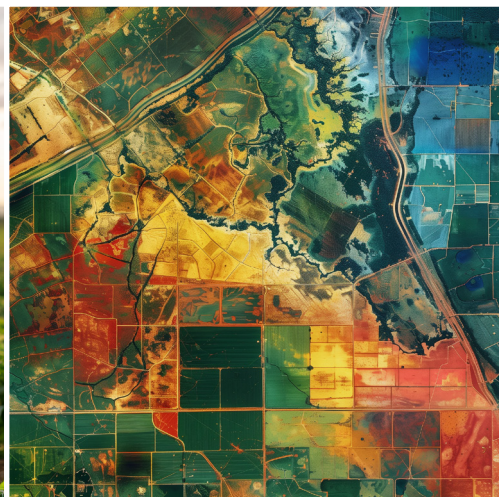
[Register Here](#)

# Masterclass #2

## Artificial Intelligence implemented in Agriculture and Food for Earth and Space applications



2 MAY 2024  
6PM - 7PM



This workshop spotlights the technological advancements addressing the complex challenges linked to climate change and food production. Students will discover the cutting-edge developments that are revolutionising the industry, including wireless and cost-effective sensors for remote disease detection in plant and animals', the creation of intelligent fertilizers, and innovations in food technology that will lead to plant production in space. Discover how an array of disciplines, from technology and engineering to mathematics and beyond, are reshaping the landscape of food production. These technological advancements are fundamentally altering the future of food production, paving the way for more sustainable, ethical, and efficient practices.



Meet Professor Sigfredo Fuentes, a scientist with a passion for cutting-edge science! He's a top-notch educator at The University of Melbourne and also teaches at the Tecnológico de Monterrey in Mexico. Dr. Fuentes is not just any professor; he's a Chief Investigator in an Australian Research Council Center of Excellence, focusing on Plants for Space from 2023 to 2030! This project will produce the plants that NASA will use to go to the Moon in 2030 and Mars in 2040 within the Artemis program.

What makes Prof Fuentes' research so exciting? Well, he dives deep into topics like how climate change affects farming, creating cool computer tools using things like machine learning and artificial intelligence (AI) to study plants, food, animals, and even wine! He's also into futuristic tech like sensors and drones for farming and is a big advocate for Agriculture 5.0, both here on Earth and potentially in space!

If that's not impressive enough, Prof. Fuentes has published over 250 super-smart articles, written five books, and contributed to four chapters, all in these amazing research areas. So, if you're into science that's out of this world, Prof. Fuentes is definitely someone you want to know about!



[Register Here](#)



# Masterclass #3

# Transdisciplinary Skillset for Future Food Systems



14 MAY 2024  
6PM - 7PM



In this workshop, we will challenge the stereotypical perceptions of agriculture and move beyond the image of a farmer on a tractor. The reality of Australian food production now includes advanced technologies, science and economics and tractors are likely to drive themselves. We will delve into the complex challenges of future food production, addressing issues such as climate change, environmental impacts, and animal welfare. Students will actively engage with these wicked problems, collaborating to develop multidisciplinary solutions, with the goal to envision a comprehensive skill set necessary to contribute to a sustainable and thriving future for food production in Australia.



Ros Gall - Six generations ago, Ros' family journeyed to Dookie with a purpose: to contribute to feeding the world. Back then, an experimental agricultural farm was established in 1877, which eventually evolved into the University of Melbourne's Dookie Agricultural campus. Fast forward to today, and Ros finds herself at the helm as the Director. But the mission remains unchanged: to tackle the challenge of feeding a growing global population with dwindling resources. Ros and her dedicated teams face this challenge head-on, armed with cutting-edge scientific evidence and innovative technologies. From pioneering robotic dairy systems to micro-sensing technologies and drones, they're constantly developing solutions to ensure our food supply keeps pace with the demands of a rapidly expanding world.



Ian Bland - Ian has been teaching animal science for longer than he cares to admit. He started his career in the UK before moving to Australia. Whilst his primary focus has been pigs and companion animals, he has also studied how far elephants in zoos walk (up to 15km per day), whether giraffes like carrots from visitors (it depends) and how to tell which animal did which poo (it involves glitter)



Peta Taylor - Peta is an Animal Science lecturer and is passionate about improving the welfare of animals - especially chickens. Her research investigates, 'do free range chickens actually like to range and why?', 'what the heck is feather licking and why do chickens do it?' and 'how can we give chicks the 'mother hen experience' artificially.



[Register Here](#)