

## Deakin University microcredentials

This is a summary of microcredentials that relate to the **sustainable futures/clean energy** group of short courses at Deakin university.

We have both credit bearing and non-credit bearing microcredentials offered 100% online, designed to deliver Deakin premium online learning experience, delivered in small class masterclasses or on demand on global open learning platform.

Our non-credit bearing microcredentials (Free Open Courses) are free, two to three weeks courses requiring two to three hours of learning per week (between six to nine hours of total learning), they are mostly delivered on global education platform, FutureLearn known for mass open online courses (MOOCs) who provide learners payment option to access automated assessment tasks and certificates of achievement

Our credit bearing microcredentials (Stackable Short Courses) are 6 weeks long (approximately 75 hours of learning) with an assessment component and they equate to 0.5 credit points, designed to stack together as credit towards a full Deakin postgraduate degree\*. For the full list of live stackable courses please visit [Deakin stackable short course webpage](#). Further information on live and upcoming courses can be found below.

### Non-credit bearing microcredentials (Free Open Courses)

Name (and live link)	Brief description/key topics/skills	Course learning outcomes
<a href="#">Role of Hydrogen in the Clean Energy Transition</a>	<ul style="list-style-type: none"> <li>- Why hydrogen?</li> <li>- Why now in Australia?</li> <li>- What's so good about hydrogen (the technical reasons)?</li> <li>- The hydrogen supply chain, production and storage, end uses</li> <li>- Opportunities and challenges for Australia</li> </ul>	<ul style="list-style-type: none"> <li>- Explain why hydrogen is part of the clean energy transition</li> <li>- Interpret the hydrogen supply chain and end uses</li> <li>- Investigate key challenges and opportunities for Hydrogen in Australia</li> </ul>
<a href="#">Introduction to Sustainability and Development</a>	The key topics addressed in this course on sustainability in contemporary international and community development, include:	<ul style="list-style-type: none"> <li>- Critically review diverse perspectives of sustainable development</li> </ul>

	<ul style="list-style-type: none"> <li>- Diverse understandings of sustainability and development</li> <li>- Changing planetary conditions and the growing human population</li> <li>- What the future might look like, and the potential for technology to save us</li> </ul>	<ul style="list-style-type: none"> <li>- Investigate how interactions between human development and environmental life support systems are/have been managed in real-world cases</li> <li>- Identify the characteristics and be able to differentiate between development, sustainability and sustainable development</li> </ul>
<a href="#">Investigating Innovation</a>	<ul style="list-style-type: none"> <li>- Different manifestations and types of innovation</li> <li>- Different stages of the innovation process</li> <li>- Information required to critically evaluate real life examples of innovation and what impacts they have</li> <li>- How to challenge the notions of innovation</li> </ul>	<ul style="list-style-type: none"> <li>- Explain the different types and outcomes of innovation</li> <li>- Identify and distinguish between ideation, development and commercialisation stages of the innovation process</li> <li>- Apply innovation as a combination of the classifications (type, process, outcome) to a real life example and examine what innovation means for you</li> <li>- Evaluate and challenge the traditional 'go it alone' approach of the innovation process</li> </ul>
<a href="#">IUCN Red List of Ecosystems</a>	<ul style="list-style-type: none"> <li>- Describe the purpose of the IUCN Red List of Ecosystems</li> <li>- Assess the benefits of the Red List of Ecosystems approach to ecosystem conservation and management</li> <li>- Explore the process of completing ecosystem assessments</li> <li>- Identify the characteristics of ecosystems</li> <li>- Explore the challenges of defining ecosystems</li> <li>- Identify threats to ecosystems and how to measure them</li> </ul>	<ul style="list-style-type: none"> <li>- Describe the purpose of the IUCN Red List of Ecosystems</li> <li>- Assess the benefits of the Red List of Ecosystems approach to ecosystem conservation and management</li> <li>- Explore the process of completing ecosystem assessments</li> <li>- Identify the characteristics of ecosystems</li> <li>- Explore the challenges of defining ecosystems</li> <li>- Identify threats to ecosystems and how to measure them</li> </ul>

	<ul style="list-style-type: none"> <li>- Classify Red List of Ecosystems outcomes and categories of risk</li> <li>- Assess the Red List of Ecosystems in the landscape of conservation policies and tools</li> </ul>	<ul style="list-style-type: none"> <li>- Classify Red List of Ecosystems outcomes and categories of risk</li> <li>- Assess the Red List of Ecosystems in the landscape of conservation policies and tools</li> </ul>
<a href="#">Introduction to Environmental Cost-Benefit analysis in Business</a>	<ul style="list-style-type: none"> <li>- Evaluate technical and environmental implications.</li> <li>- Project planning and implementation.</li> <li>- Identify challenges and opportunities in renewable energy systems.</li> </ul>	-

<a href="#">Introduction to Forecasting in Business</a>	<ul style="list-style-type: none"> <li>– Basic concepts and uses of time series forecasting</li> <li>– Key steps in forecasting tasks</li> <li>– Conditions and considerations fore forecasting</li> <li>– Basic forecasting methods</li> </ul>	<ul style="list-style-type: none"> <li>– Justify uses for forecasting in business and economics</li> <li>– Identify components of a time series</li> <li>– Describe basic forecasting methods and processes</li> </ul>
<a href="#">Introduction to Predictive Modelling in Business</a>	<ul style="list-style-type: none"> <li>– Predictive modelling</li> <li>– Machine learning</li> <li>– Biases in predictive modelling</li> <li>– The CRISP-DM lifecycle</li> </ul>	<ul style="list-style-type: none"> <li>– Explain the core concepts of predictive modelling</li> <li>– Identify predictive modelling opportunities with business data within public and private sectors</li> <li>– Apply the steps of the CRISP-DM process at a conceptual level in a corporate environment</li> </ul>
<a href="#">Introduction to Humanitarian Aid</a>	<ul style="list-style-type: none"> <li>– The history of humanitarianism</li> <li>– The principles and values that underpin humanitarian action</li> <li>– Different actors and how the system works</li> <li>– Exploring if localisation is the future of humanitarian action</li> </ul>	<ul style="list-style-type: none"> <li>– Explore the history of humanitarianism</li> <li>– Identify the key principles and values associated with humanitarian action and management</li> <li>– Describe the role of the different actors and their relationship before, during and after a humanitarian response</li> <li>– Identify the future of humanitarian action and the role of localisation</li> </ul>
<a href="#">Gender and Development</a>	<ul style="list-style-type: none"> <li>– explore the challenges for achieving gender justice throughout the world</li> <li>– examine the concepts of gender, development and what brings gender and development together.</li> </ul>	<ul style="list-style-type: none"> <li>– What does gender have to do with international development?</li> <li>– Is ‘woman’ the core of gender and development?</li> <li>– What brings gender and development together?</li> <li>– What is the history of women in international development?</li> </ul>

### Credit bearing microcredentials – Stackable Short Courses

Name (and live link)	Brief description/key topics/skills	Course learning outcomes
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<p><a href="#">Renewable Energy Microgrid: Market &amp; Policy</a></p> <p><b>New course: May 22nd, 2023</b></p>	<ul style="list-style-type: none"> <li>- Project management</li> <li>- Policy analysis</li> <li>- Renewable energy optimisation</li> <li>- Energy system management</li> <li>- Energy system design</li> <li>- Engineering</li> <li>- Consulting</li> <li>- Policy evaluation</li> <li>- Policy design</li> </ul>	<ul style="list-style-type: none"> <li>- Describe the roles in the energy market and describe how this connects economics and engineering.</li> <li>- Calculate basic economic equations relevant to energy markets.</li> <li>- Identify the benefits and challenges in the context of integrating renewable energy microgrid into the conventional energy market.</li> <li>- Evaluate the similarities and differences between the global energy market and the Australian energy market.</li> </ul>
<p><a href="#">Change Tools</a></p>	<ul style="list-style-type: none"> <li>- Utilise change principles</li> <li>- Create change plan</li> <li>- Develop change visualisation</li> <li>- Select change tools</li> <li>- Apply change tools</li> <li>- Manage stakeholder communication</li> <li>- Manage change process</li> <li>- Measure change</li> </ul>	<ul style="list-style-type: none"> <li>- Distinguish fundamental change tools, which can be applied within organisations.</li> <li>- Create a basic change management plan that considers different types of change, identifies key change roles and sets realistic expectations and achievable goals.</li> <li>- Select and apply a range of change tools based on an understanding of a situation, and the role and purpose of each tool.</li> <li>- Create a basic communications plan that raises organisational change awareness through effective use of channels and messaging to stakeholders.</li> <li>- Educate others in change principles, engage with and influence stakeholders, and visualise the change across various audiences.</li> </ul>
<p><a href="#">Foundations of Innovation</a></p>	<ul style="list-style-type: none"> <li>- Build problem-solving capability by identifying challenges, and defining and applying frameworks.</li> <li>- Distinguish 'wicked problems' and analyse risk in an organisational context.</li> </ul>	<ul style="list-style-type: none"> <li>- describe the multifaceted and complex nature of innovation</li> <li>- identify and explain underlying motives for innovation engagement by both individuals and organisations</li> </ul>

	<ul style="list-style-type: none"> <li>- Apply future thinking and problem-solving tools and methodologies, such as the Possibility Frontier and Disruption S Curve.</li> <li>- Communicate the drivers and reasons for innovation.</li> </ul>	<ul style="list-style-type: none"> <li>- demonstrate an understanding of institutional context that conditions innovative behaviours</li> <li>- illustrate how an organisation utilises its innovation ecosystems in order to successfully deliver the innovation.</li> </ul>
<a href="#">Innovation and ideation</a>	<ul style="list-style-type: none"> <li>- Change management</li> <li>- Communicating vision</li> <li>- Written and verbal communication</li> <li>- Ideation (identify and articulate solutions)</li> <li>- Problem framing and definitions</li> <li>- Planning</li> <li>- Apply design thinking tools</li> <li>- Business model innovation</li> </ul>	<ul style="list-style-type: none"> <li>- describe a range of strategic and ideation frameworks in the context of innovation</li> <li>- apply design thinking methods to propose human-centred approaches to problem solving</li> <li>- evaluate the merits of different ideation strategies within the context of organisational innovation</li> </ul>
<a href="#">Innovation and Leadership</a>	<ul style="list-style-type: none"> <li>- Written and verbal communication</li> <li>- Visualisations and diagrams</li> <li>- Apply relevant frameworks</li> <li>- Identify challenges</li> <li>- Planning</li> <li>- Research skills</li> <li>- Risk analysis</li> </ul>	<ul style="list-style-type: none"> <li>- describe the drivers for and potential barriers to internal innovation (intrapreneurship)</li> <li>- reflect on and appraise your personal experience of change to formulate strategies for leading organisational intrapreneurship</li> </ul>
<a href="#">Innovation and Organisational Change</a>	<ul style="list-style-type: none"> <li>- Change management</li> <li>- Communicating vision</li> <li>- Written and verbal communication</li> <li>- Apply appropriate frameworks</li> <li>- Identify challenges</li> </ul>	<ul style="list-style-type: none"> <li>- investigate a range of generic business strategies utilised by organisations in order to achieve a sustainable position in the market</li> <li>- apply strategic analysis tools to identify change drivers in an organisational context</li> </ul>

	<ul style="list-style-type: none"> <li>- Budgeting</li> <li>- Planning</li> <li>- Research Skills</li> <li>- Risk analysis</li> </ul>	
<a href="#">Promoting Human and Planetary Health</a>	<ul style="list-style-type: none"> <li>- learn about the relationship between human health and the environment, and the challenges and opportunities for promotion</li> <li>- identify the principles for healthy, just and sustainable communities, including sustainable health paradigms and global mandates</li> <li>- explore systems thinking and health, looking at inter-disciplinary collaborations, and environment and social justice</li> <li>- study the approaches to promoting human health and health of the environment, with a focus on the global food system and climate change</li> <li>- learn to lead, design, plan and evaluate co-benefit initiatives using systems thinking tools and approaches.</li> </ul>	<ul style="list-style-type: none"> <li>- Analyse the challenges of climate change and environmental degradation for human health.</li> <li>- Analyse the opportunities for integrating human and planetary health in health promotion initiatives.</li> <li>- Develop and apply models for promoting health and addressing threats to the environment.</li> <li>- Analyse needs, identify stakeholders and generate potential strategies to achieve sustainable ecological health outcomes.</li> <li>- Propose and justify an evidence-based initiative addressing a priority health issue using an ecological health approach.</li> </ul>
<a href="#">Predictive Modelling in Business and Economics</a>	<p>There is a rising demand for evidence-based decision-making in business and economics using newly available data and modern quantitative methods, including predictive modelling.</p> <ul style="list-style-type: none"> <li>- On this six-week microcredential, you'll uplift your skills to draw data-driven business and economic insights in your decision-making</li> </ul>	<ul style="list-style-type: none"> <li>- Recognise predictive modelling opportunities and potential benefits in various business and economics domains</li> <li>- Pose an appropriate business and economics problem for predictive modelling and pre-process raw business data into a modelling-friendly format</li> <li>- Identify popular tree and ensemble-based predictive models and their comparative performance evaluation</li> </ul>

		<ul style="list-style-type: none"> <li>Propose and evaluate practical predictive modelling-based solutions for a given business and economics problem using a state-of-the-art cloud-based technology platform</li> </ul>
<a href="#">Forecasting in Business and Economics</a>	<ul style="list-style-type: none"> <li>This microcredential equips you with knowledge and skills for time series forecasting, by working with real-world data and industry-friendly software. You will learn how to analyse time series to detect patterns and apply forecasting models, which will enable you to forecast future values in the series. These skills can be used to help with decision-making, budgeting, price-setting, rostering, and more.</li> </ul>	<ul style="list-style-type: none"> <li>Recognise forecasting opportunities and potential benefits in various business and economics contexts.</li> <li>Identify level, trend, seasonality, and error components of a time series and distinguish between additive and multiplicative forecasting models.</li> <li>Differentiate popular forecasting models based on simple/ double/ triple exponential smoothing techniques and carry out their comparative performance evaluation.</li> <li>Propose and evaluate practical solutions for a given business and economics forecasting problem using a state-of-the-art cloud-based technology platform.</li> </ul>
<a href="#">Sustainable Leadership to 2030 (Synchronous Masterclass)</a>	<ul style="list-style-type: none"> <li>Organisations that align to environmental, social and governance (ESG) criteria perform better and are more resilient to impacts, such as COVID-19, according to independent research. This short course equips you with the practical tools and methodologies to achieve a sustainable and resilient business future</li> </ul>	<ul style="list-style-type: none"> <li>Understand the drivers and impacts of the climate, energy and the circular economy transition.</li> <li>Identify physical and transitional opportunities, risks and implement optimum responses, on a range of meaningful timescales.</li> <li>Develop and present a credible case for change, including recommendations on an integrated response to strategy, management and reporting to your senior executive.</li> </ul>



<a href="#">Data Analytics for Supply Chain Management</a>	<ul style="list-style-type: none"> <li>- Apply fundamental data analytics techniques for exploratory data analytics using spreadsheet and database tools.</li> <li>- Perform explanatory data analysis by preparing data, interpreting findings, and deriving insights to support data- driven decision-making.</li> <li>- Create actionable data-driven insights through visualisation and storytelling.</li> <li>- Evaluate organisational context and objectives, ethical and social considerations when applying data analysis.</li> </ul>	-
<a href="#">Environmental Cost Benefit Analysis in Business</a>	<ul style="list-style-type: none"> <li>- Explain cost-benefit analysis and its sensitivity to time and uncertainty.</li> <li>- Incorporate non-market valuation and climate policy into cost-benefit analysis.</li> <li>- Reflect on cost benefit analysis findings including their complexity and subjectivity.</li> </ul>	-

### In Development - Credit bearing microcredentials – Stackable Short Courses

Name	Brief description/Planned learning outcomes
<a href="#">Climate Change Communication</a>  <b>Going live in October 2023</b>	<ul style="list-style-type: none"> <li>- Demonstrate a detailed understanding of evidence-based climate communication strategies by applying one or more of these strategies.</li> <li>- Identify and apply evidence-based climate change communication strategies appropriate to purpose and audience.</li> <li>- Recognise different audience types and tailor suitable/relevant climate communication to the chosen audience.</li> </ul>

	<ul style="list-style-type: none"> <li>- Create engaging, best-practice communication on climate change sustainability impacts, mitigation or adaptation, intended to catalyse action.</li> <li>- Identify the communication challenges inherent in the 'wicked problem' of climate change.</li> </ul>
<a href="#">Renewable Energy Microgrid: Integrating Green Hydrogen</a> <b>Going live October 2023</b>	<ul style="list-style-type: none"> <li>- Evaluate technical and environmental implications.</li> <li>- Project planning and implementation.</li> <li>- Identify challenges and opportunities in renewable energy systems.</li> </ul>
<a href="#">Life Cycle Assessment: A Practical Introduction</a> <b>Going live in September 2023</b>	<ul style="list-style-type: none"> <li>- Describe the principles of the life cycle assessment of a product and/or service</li> <li>- Design a flowchart to support the life cycle assessment of a product or service</li> <li>- Conduct life cycle assessment of a product and/or service</li> <li>- Interpret and analyse life cycle assessment outcomes to formulate a strategy for improved environmental performance</li> </ul>

\*Subject to successful completion of the short course and meeting Deakin's award course admission and selection requirements, including English language proficiency requirements.

Limits on elective space in a destination degree are outlined in specific degrees' course rules within the Deakin University Handbook. Typically, a maximum of four stackable short courses can be used as credit (2 credit points) towards a masters; and two stackable short courses can be used as credit (1 credit point) towards graduate certificates and diplomas.