



Enhancing the learning experience of online students with educational videos - Digital Uplift feature

Published: 23 August 2019

There are many advantages of using videos in education. Pedagogical benefits include facilitating thinking and problem solving (Allam, 2006), inspiring and engaging students (Willmot et al, 2012), and assisting with mastery learning (Galbraith, 2004). Videos can teach and help reinforce complex concepts and calculations taught in textbooks, demonstrate procedures and processes, and if available online, students are able to revisit content materials for self-study anywhere anytime.

The course **ELEC9711 - Power Electronics for Renewable and Distributed Generation** underwent digital uplift and will be offered in the Online Masters Program and as Blended Learning within the School of Electrical Engineering and Telecommunications. The PVC (Education) Digital Uplift (DU) Engineering team in collaboration with Professor John Fletcher (Course Convenor) and Dr Matthew Priestley (recent PhD graduate) produced 64 short videos for the course. The videos provided online students with richer real-world context of course content and an opportunity to explore relevant engineering applications.

Collaboration and student partnership:

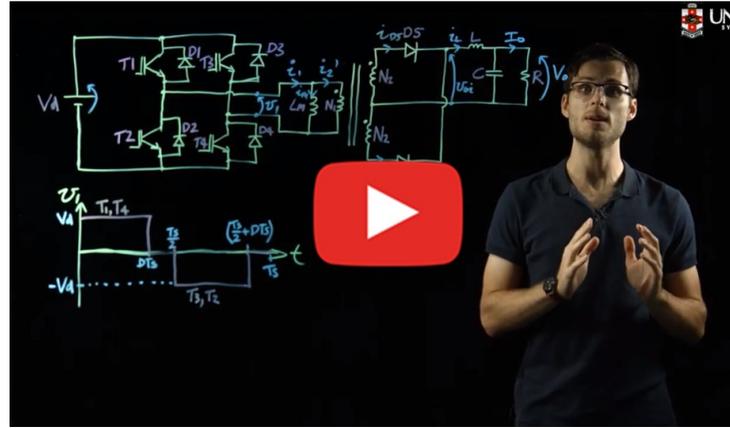
Following an intense scoping phase which included mapping out the course deliverables, the DU team worked closely with Professor Fletcher and Dr Priestley on the content. As a PhD candidate and a tutor of ELEC9711 at the time, Dr Priestley provided valuable expertise and collaborated closely with the DU team to carry out the project in recording and reviewing the video. Finalising the production of the videos were a combined effort by all parties involved and the PVC(E) Media Team.

Online resources:

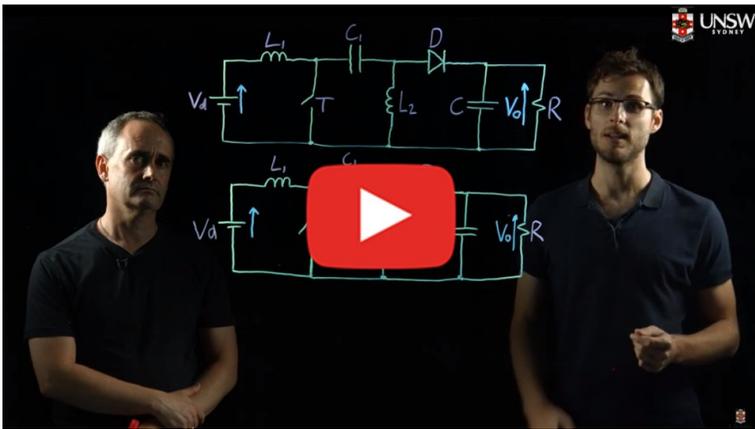
Videos were produced using various technologies such as screencast, greenscreen, and lightboard. Content was delivered in various styles such as interviews, tutorials and instructional videos. Below are some examples:



Welcome Video by Prof John Fletcher (Course Convenor) and Dr Matthew Priestley (recently awarded a PhD degree)



Using Lightboard, diagrams can be drawn to explain complex graphs and calculations.



Dr Priestley and Prof Fletcher take turns to explain various concepts and include key questions to each other within the videos.



Interviews with other UNSW Engineering academics to contextualise and remark on the importance of the course they are studying.



The mid-term checkpoint video helps students to realise how they are tracking against the expected course learning outcomes.



The PV inverter video demonstrates how complex theory is applied on a device that is available on the market, bridging the gap between the content and practice.

Benefits for academics and students:

This course with the new online resources will be delivered in T2 2020. Some of the benefits for teachers and students include:

- **Teaching flexibility during face-to-face time:** As theory is covered in the videos, some of the class time can be dedicated to in-depth discussions with students.
- **Accessibility:** Videos are relatively short, transcribed and available online allowing students to access them anytime anywhere.
- **Engaging content:** All videos cover course content and can serve multiple purposes. For example, mid-term check point will allow students to consolidate what they have learnt, help them to contextualise the course and view demonstrations on how the theories are applied.

Additional note:

This course will be hosted on OpenLearning for online students which is a social online learning management system (LMS) and MOOC platform.

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Supported and endorsed by Professor Julien Epps, Head of School, School of Electrical Engineering and Telecommunications.

For information about the Digital Uplift program (part of the Inspired Learning Initiative) get in touch with the PVCE team: DigitalUpLift@unsw.edu.au

References:

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Document Version Date 23/08/2019

UNSW CRICOS Provider Code: 00098G

<https://teaching.unsw.edu.au/enhancing-student-learning-experience-video>