Partnering to build employability skills and communicative competence in a Master of Engineering subject.

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Overview of ECTE975

Core subject in Master of Engineering : 6 cp in the School of Electrical, Computer and Telecommunications Engineering.

Naghdy, Hayes & Purser, "Building employability skills in ICT Master coursework curriculum," in 20th Annual Conference for the Australasian Association for Engineering Education, 2009, pp. 668-673.

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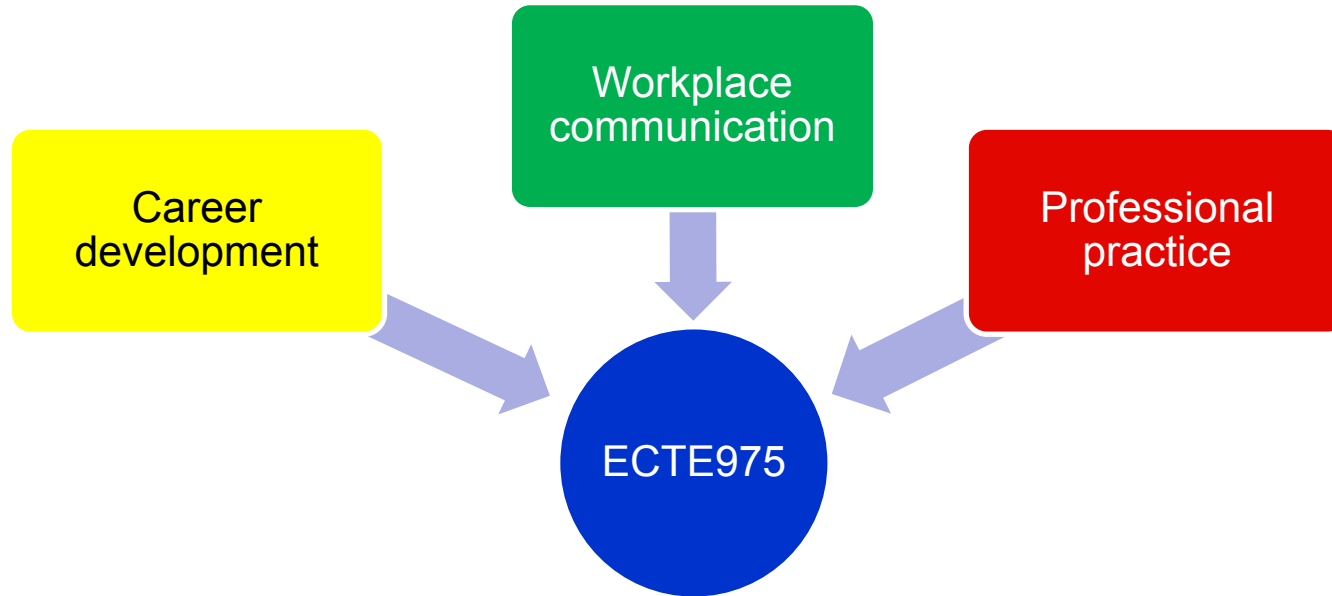
From the subject outline

Subject description:

'…an opportunity to develop a better understanding of the nature of generic skills and their significance in the Australian workplace…'

The subject aims to prepare students to communicate effectively with individuals and groups (verbally, written and electronic modes).

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Student profile

- Typically, 100% international students from China, India , Pakistan, Bangladesh, Nepal and countries in the Middle East (37 students in 2015; 56 in 2016; 88 in 2017)

- English as an Additional Language

- Some have experience of English as a medium of instruction at the secondary and tertiary levels

- Diverse professional backgrounds

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The partnership

Faculty of Engineering professor co-teaches with the Communications/writing lecturer: 6 hours over a 12 week period

+

Communications lecturers:
2 hours x 12 weeks

+

Career Development lecturer:
2 hours x 12 weeks

Week 1: Orientation to the subject
'soft skills' + professional practice

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Assessment task	Weightage
Oral presentation (individual: introduce yourself)	10%
Oral presentation (group: preparing for scoping project)	10%
Essay	10%
Job application	15%
Job interview	15%
Project scoping document and fair contribution report	20%
Project final oral presentation	10%
Class participation	10%

Literature on employability and ELP

- International students aspire to gain professional work experience in Australia. (Arkoudis, Baik, Bexley, and Doughney, 2014; Gribble, 2014)

- Employers value communication skills highly and for international students ELP tends to be a barrier to getting profession specific jobs (Arkoudis, Baik, Richardson, 2012)

- Reluctance on the part of employers to take on international students because of their negatively perceived EL proficiency (Harrison, 2013)

- 'employability skills that include communication, teamwork and project management' (King, Howard, Brodie, Male, Hoffmann, 2015)

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Scoping project- A problem solving macro-genre

Case Studies: common in Business, Engineering, Nursing etc.

- Identify, define, and analyse the problem
- Determine ways of solving the problem
- Collect data
- Offer viable solutions
- Evaluate the solutions using specific discipline –driven criteria

(Carter, 2007)

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Waratah Technology

Waratah Technology – Embedded Internet for home control and monitoring

Waratah Technology believes that the time is right for the company to offer its client an innovative and simple embedded Internet system for home control and monitoring.

With the popularity of smart phones and availability of Broadband on cellular networks, Waratah Technology is planning to produce cost effective systems that allow people to monitor the security of their houses and control their appliances remotely through their smart phones.

In your scoping project, you are required to identify available technologies and recommend one which is superior in performance and cost for possible production. In particular, you need to answer the following questions:

(a)   What are the companies offering such products worldwide?

(b)   What are the technologies used in such product?

(c)   How popular are such systems and to what extent they are used?

(d)   How do these products compare in term of performance and cost?

(e)   Which technology do you recommend and why?

Assignment

Develop a scoping study for the proposed project for presentation to the board that will decide whether the project will go ahead or not. The study should include the information listed above, and any other information you feel would be helpful. If the project can be

Scoping project report

Purpose:
Persuade a 'board of directors' by presenting arguments for a particular course of action (for example: ask for financial, technical or human resource support).

Audience:
Non- specialist/ Non-technical

Product:
A 'professional' looking report based on research: at least two journal articles, internet research on a product. Images allowed.
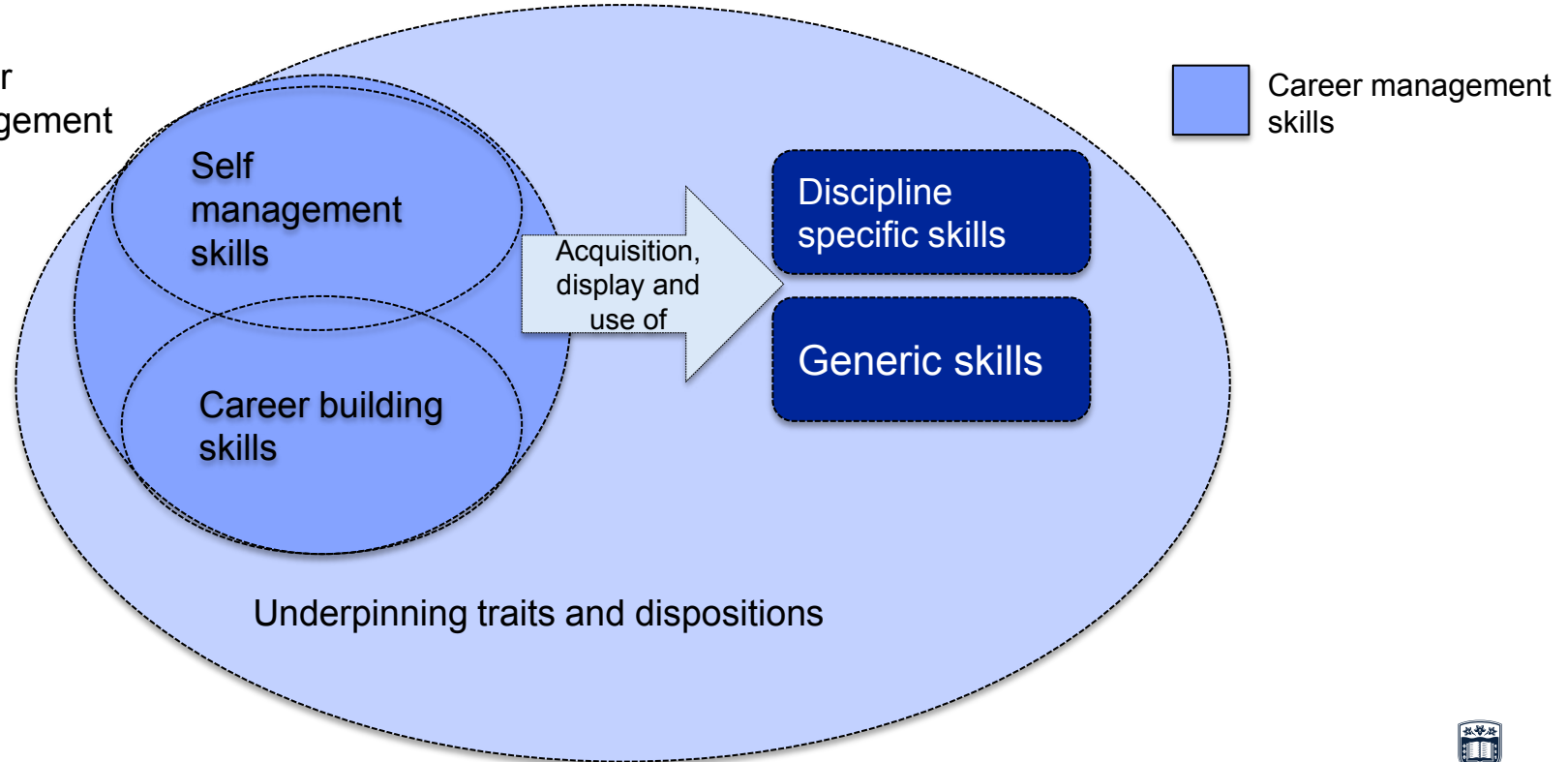
Elements of academic/ professional writing:
Well-structured, well-organised and accurately cited material.

Conceptual model of graduate attributes for employability including career management skills. Ruth Bridgstock (2009) The graduate attributes we've overlooked: enhancing graduate employability through career management skills, *Higher Education Research & Development*, 28:1, 31-44.

Career management

Self management skills

Career building skills

Acquisition, display and use of

Discipline specific skills

Generic skills

Underpinning traits and dispositions

Career management skills

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Challenges of the subject

Limited professional English language competence for the Australian context

Limited understanding of the Australian workplace

Limited workplace experience in their home countries

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How the subject meets the challenges

Learning activities and assessments are aimed at developing cultural and linguistic competence and confidence:

- Employability skills related to their profession: Giving students practical experience in reading advertisements in the Australian context, writing job applications, doing mock interviews, and so forth

- Developing engineering project related competencies: Group work, professional writing in teams, persuasive writing.

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Working in groups

Challenges of working in teams:

- Cross cultural /diverse linguistic groups
- Gender
- Interdisciplinary teams
- Varied levels of experiences and authority in relation to group work

Assumptions:

- Some experience of working in teams
- Some have in handling gender, language diversity
- We expect it to be a level play field

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Assessment of group activities

Three group activities:

- One formative group oral presentation

- One final group oral presentation

- Group writing assessment task (Scoping Report)

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Setting up group work

- Choice of roles (fixed/rotating)

- Writing as a team respectfully and effectively

- Fair contribution

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Individual tasks

- **Individual oral presentation**

- **Individual writing task: persuasive genre/argumentation**

Formative Feedback is crucial: Personalised and targeted feedback on their performance and the expectation that students use the feedback to improve in further written and oral assessment tasks

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Partnerships and collaborations

Partnerships are formed with a view to attain outcomes that would be impossible or impractical to achieve alone (Weitz and Jap, 1995)

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Partnership

Professional practice: Subject co-ordinator sets the scenario and assesses the major assessment task – the Scoping Project: Group oral presentation and written report.

Career Development lecturer: Teaches to the career management/workplace in Australia aspects of the subject and assesses these.

ALL lecturers: A key role across the subject by scaffolding the students' communication skills development in their Engineering tasks as well as their Career Development tasks.

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Our role in the partnership

- Develop linguistic ability for the workplace: raising awareness of linguistic divergences in terms 'comprehensibility': including pronunciation, intonation, prosody, pragmatic, syntactic, elements of lexico-grammar

- Develop genre awareness of types of texts for the workplace: scoping projects, oral and written presentations/ formal and informal (Explicit teaching about audience and purpose)

- Hidden role that AALL lecturers developed: Raising assessment literacy

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Changes afoot … and possibilities of changing partnership

➢ Greater input into the design?

➢ Moving more towards a WIL model (Virtual/real)

➢ Case study based group discussions

➢ Wiki or blogs to support formative assessment

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