Unifying WIL in Science at the University of Tasmania

Tina Acuna
Andrew Seen
Rebecca Gehling
Nicole Herbert
Susie Haley
Shane Powell

Tina.Acuna@utas.edu.au
Project aims

1. Develop a generic program for on- and off-campus WIL in the faculty
2. Develop a network of industry contacts for WIL in Science and related disciplines for Tasmania
3. Create a Faculty Advisory Board for industry engagement
Project aims

1. Develop a generic program for on- and off-campus WIL in the faculty

2. Develop a network of industry contacts for WIL in Science and related disciplines for Tasmania

3. Create a Faculty Advisory Board for industry engagement
Context at UTAS

- Faculty of Science, Engineering and Technology
  - Five schools; BSc with 17 majors

- December, 2015:
  - No WIL ‘placement’ type unit
  - Limited discussion of WIL in Science
  - ‘Green’ paper imminent on WIL

- December, 2016
  - ‘White’ paper on whole of curriculum renewal across UTAS
  - WIL, experiential learning as a cornerstone
A generic program for on- and off-campus WIL in the Faculty

<table>
<thead>
<tr>
<th>Week / Date</th>
<th>Week 1</th>
<th>Week 2</th>
<th>Week 3</th>
<th>Week 4</th>
<th>Week 5</th>
<th>Week 6</th>
<th>Week 7</th>
<th>Study break</th>
<th>Week 8</th>
<th>Week 9</th>
<th>Week 10</th>
<th>Week 11</th>
<th>Week 12</th>
<th>Week 13</th>
</tr>
</thead>
<tbody>
<tr>
<td>ILO 1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Intended Learning Outcomes</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>ILO 1. Identify and apply the knowledge, skills and attributes required for the professional workplace in a relevant science setting</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>ILO 2. Communicating and documenting of professional work experience</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>ILO 3. Working responsibly, ethically and safely as individuals and in collaboration with others</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>ILO 4. Critically self-reflect on personal strengths and development needs in the workplace</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Formal Assessment</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>SA#1 Preparation of an EoI and cv demonstrating understanding of the work environment, a risk analysis of work environment and completion of legal agreements</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>ILO 1, 3</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Individual assessment task 20%</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>SA#2 Document a daily journal that includes: activities, interaction, the experience and employer feedback.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>ILO 1, 2, 3</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Individual assessment task 40%</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>SA#3 Write a short reflection on employer feedback; define the knowledge, skills and attributes to succeed in the workplace; complete a proforma on your personal strengths, skills and development needs; revise your EoI.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>ILO 4</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Individual assessment task 40%</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Learning Activities</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>LA#1 students completed iPREP and ResumePlus; identified and applied for a work placement/project; complete a risk analysis of the work place; have completed any legal agreements</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>LA#2. Professional experience (off-campus or on-campus; may be project work for a client in small groups)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>LA#3. Journal reflections on professional work</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Student feedback
What work have you done?
Placement vs. project work in a team for a client

- Placement is:
  - ‘More realistic and relevant’
  - ‘Build up [professional] contacts’
  - ‘Promotes communication’
  - ‘Lead to work after graduation’
  - ‘Find out what people do with a degree in my discipline’

- I don’t like group work
  - ‘Not for students with a high GPA’
  - ‘Benefits industry, not students’

- I like group work
  - ‘Likeminded students, each with a unique perspective to bring to the table’
  - ‘Easier to manage with study’
When to offer the unit

Q9 The amount of time working in industry or for your client would be approximately 10 days, undertaken in a block or as one or two half days per week. Which semester would you prefer to enrol and why?

Answered: 63  Skipped: 14
Authenticity and proximity

- **Very authentic but not proximal:**
  - Moderate level WIL
  - Eg Health student working in a simulated medical environment
  - Eg History student curating a digital exhibition
  - Eg MCQ factual knowledge test

- **Very authentic and proximal:**
  - High level WIL
  - Eg Pharmacy student dispensing in final year placement in a pharmacy
  - Eg Business student observing practice at a company

- **Not authentic or proximal:**
  - Not WIL

- **Not authentic but very proximal:**
  - Low level WIL

**Authenticity:** Degree to which task resembles professional work

**Proximity:** Degree to which setting resembles professional context
Focus group discussions with academics who teach in the BSc

<table>
<thead>
<tr>
<th>#</th>
<th>Activity</th>
<th>High authenticity, high proximity</th>
<th>High authenticity, low proximity</th>
<th>Low authenticity, low proximity</th>
<th>Low authenticity, high proximity</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Placement</td>
<td>✅</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>Project work for a client</td>
<td></td>
<td>✅</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>Field trip</td>
<td></td>
<td></td>
<td>✅</td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>In class interaction with an employer</td>
<td></td>
<td></td>
<td></td>
<td>✅</td>
</tr>
<tr>
<td>5</td>
<td>Simulated and PBL</td>
<td></td>
<td>✅</td>
<td></td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>Direct work related skills</td>
<td></td>
<td></td>
<td></td>
<td>✅</td>
</tr>
<tr>
<td>7</td>
<td>Industry research project</td>
<td></td>
<td></td>
<td></td>
<td>✅</td>
</tr>
</tbody>
</table>

‘a good thing. US their cv’s are chocked up with voluntary work. seek out experiences’

‘a way through that doesn’t involve…every student into a workplace’

‘suggests it’s not WIL…push back on this…WIL assumes task based learning, which isn’t always the case’

‘a project team isn’t an authentic experience; no opportunity to practice skills, watch someone else’

N = 21; 10 disciplines
Reflective practice in Science

- Maths & Physics: ‘Very little, we focus on technical skills and problem solving’ ‘not about how did they feel’

- Zoology: ‘Spend a lot of time talking about different types of communication. Reflection is a different type of writing. Teach students what that means. Will talk about the entry every week in the journal. Meta-reflection at the end of the unit’

- Surveying: ‘Students saying reflection is really good- can put it into their e-portfolio’

- ‘Really need to guide students in reflection. Very foreign’
Availability of places

– ‘Field trip opportunities increasingly restricted due to on-site WHS’

– ‘Difficult for us to place students locally – if they are finding WIL it’s in the wilds of WA or a leach infested west coast of Tasmania’

– ‘In the context of geoscience, we would have great difficulty placing someone for 7 – 10 days in Hobart. However for some of our students who take vocational work where they are in a workplace for up to 2.5 months’
Industry

- Keen to engage with the university
- Graduate employability
  - Application of skills
  - Extra-curricula activities
  - Communication, business acumen/sense
- Semesters and timing of work can be out of sync
- Small companies, in some cases, more agile for accommodating students on placement
- Global companies interested in the flexibility offered by group projects
Industry reference group

- Option A
  - Industry reference group
  - Industry representatives from a range of Science stakeholders
  - TOR drafted
Industry reference group

- Option A
  - Industry comes to the Faculty
  - Industry representatives from a range of Science stakeholders
  - TOR drafted

- Option B
  - Distributed industry network
  - Regional stakeholder groups
Conclusions

- Positive change towards implementing WIL in the Faculty
- Opportunity to aggregate WIL activities in the Faculty
- Two approaches identified for the Faculty to engage with industry
- Excellent timing, given the strategic direction of UTAS outlined in our Curriculum Renewal Project
- Linkages made with other universities regarding WIL