Academic Resiliency in the Faculties of Science, Engineering, Architecture & Design
EXECUTIVE SUMMARY

Developing Flexibility and Resilience in Teaching in the Faculties of Science, Engineering, Architecture and Design, Victoria University of Wellington

Introduction, purpose, scope, and structure of report

This report serves as a final report for activities conducted by the Flexible and Resilient Teaching Project for the office of the Pro-Vice Chancellor for the Faculties of Science, Engineering, Architecture and Design (SEAD). The purpose of this project was to develop recommendations on how to make teaching within SEAD courses resilient to potential disruptions such as those caused by an earthquake. This report includes the following elements:

- Descriptions of project activities and outputs: Steering group meetings, review of literature, review of resiliency plans, and resiliency pilot courses, and University of Canterbury site visit.
- Recommendations to increase academic resiliency at various levels (SEAD, institutional, course level, and within supporting departments (ITS, CAD).
- Implementation plan.
- Tool for course level resiliency planning and implementation.

The primary outcomes of this project were a collection of well researched, well-reasoned, and tested recommendations for increasing the resiliency of teaching and learning within SEAD.

Project activities

This project consisted of four major activities: monthly steering group meetings, review of literature, review of academic resiliency plans from other tertiary institutions, and course resiliency pilot projects. Each project activity helped to develop recommendations and many of these recommendations will be trailed in pilot courses and in the course resiliency assessment. Where applicable, final recommendations will be based on the findings of the pilot courses and resiliency assessment.

Steering group meetings: The academic resiliency steering group included 13 members including: academics from each school within SEAD, as well as staff from ITS, CAD, and records management. The purpose of these meetings was to engage academic staff in developing resiliency recommendations that were salient to academic staff and would be effective across the many disciplines, course types, and teaching styles found across SEAD.

Review of literature: We conducted an extensive review of literature related to University of Canterbury response and recovery to disruptions caused by earthquakes. This information helped to identify the challenges and solutions to teaching in an earthquake disrupted environment. The information found in this literature focused on the several topics:

- Communication
- Electronic resources
- Alternative teaching locations
• Use of digital technologies in disrupted environments.

This selection of literature included implicit and explicit recommendations for teaching in a disrupted environment and how to prepare for such a scenario. The academic resiliency working group adopted and adapted many of these recommendations to create VUW and SEAD specific recommendations.

**Review of academic resiliency plans at other tertiary institutions:** We examined the academic resiliency plans of over 20 tertiary institutions. We found that the majority of plans were created within the last 5 years as a result of the threat of H1N1 flu outbreak of 2009. However, all plans were generalized to accommodate academic resiliency in a wide range of possible disruptions (man-made and natural disasters, and pandemics). All of the academic resiliency plans we examined focused on the use of digital technologies in the provision of teaching in the event of a disruption. Common academic resiliency strategies included:

• Planning and implementation: Course, school, faculty, and institution level academic resiliency plans.

• Dedicated website for academic resiliency which includes the following information:
  o Checklist and/or quiz to determine the degree to which individual courses/instructors are prepared for teaching.
  o Preparation instructions and procedures for communicating with students in the event of a disruption.
  o A list of possible continuity options and with links on how to use them.
  o Information on workshops related to the effective use of academic continuity.
  o Contact information on how to get one on one help from IT, instructional designers, etc.

• Dedicated personnel such as an “academic continuity coordinator” to initiate and implement course, school, faculty, and institutional level plans.

**Pilot projects:** In consultation with the academic resiliency working group, a wide variety of courses throughout SEAD were piloted for resiliency. This exercise helped to:

• Determine the needs of specific disciplines, and types of teaching scenario, in resilience preparation.
• Identify the resources and processes needed for up-scaling resilience throughout all SEAD programmes.
• Determine the effectiveness of academic resiliency planning tools and processes.

Among our pilot courses we found that nearly every course required minimal to substantial changes to be made resilient. However with the appropriate resources (a person to guide planning, course resiliency planning template, and a person with expertise in digital technologies) these changes could be identified and implemented efficiently.
Major recommendations

1.1 Develop and implement course, school, and faculty level academic resilience plans. Planning and implementation will be supported as outlined in recommendation 1.2. Planning and implementation priority will be given to “critical” courses: large-enrollment course, or offered once a year, or required by graduating students, or is a pre-requisite for a major or part of a sequence.

1.2 Employ a SEAD Resilience Coordinator to assist schools and individual academics in creating course and department resilience plans.

1.3 Development of earthquake teaching recovery team within SEAD.

1.4 Development of a SEAD “Academic Resiliency” website. This website would contain the following features and information and would provide the resources required for course level resiliency planning outlined in recommendation 1.1.

Implementation Plan

- Employ an academic resilience coordinator to support recommendations 1.1, 1.3, and 1.4.
- Identify critical courses for each school within SEAD.
- Academic resilience coordinator to guide academic staff in development of academic resilience plans for critical courses using the course academic resilience template (Appendix A).
- Academic staff to work with an instructional designer (ITS and CAD) to implement the use of new pedagogy and technology to enhance teaching and increase resiliency.
- Academic resiliency coordinator to work with ITS and CAD to develop an Academic Resiliency website (recommendation 1.4).
- Course level resiliency planning in non-critical courses. Academic resiliency coordinator to implement course level resiliency planning and implementation in non-critical courses using workshops and individual assistance to academic staff. Instructional designer to support implementation pedagogy and technology needs.
Developing Flexibility and Resilience in Teaching in the Faculties of Science, Engineering, Architecture and Design, Victoria University of Wellington

Author: Tim Archie- Flexible and Resilient Teaching Project Research Fellow

Contributors:

Rhian Salmon- Science in Context
Peter Ritchie- School of Biological Sciences
Stuart Marshall- Engineering and Computer Sciences
Mairead de Roiste- School of Geography, Environment, and Earth Sciences
Suzanne Boniface- School of Chemical and Physical Sciences
Richard Arnold- School of Mathematics, Statistics, and Operation Research
Leon Gurevitch- School of Design
Paul Jose- School of Psychology
Irina Elgort- Centre for Academic Development
Jonny Flutey- ITS
Beth Smith- ITS
Sarah Hoyte- ITS
Craigie Sinclair- Record Services
# Table of Contents

Introduction .................................................................................................................................................. 1
Outcomes ..................................................................................................................................................... 1
Activities ..................................................................................................................................................... 1
SEAD Resiliency Steering Group Meetings ................................................................................................. 3
  SEAD academic resiliency group members ............................................................................................. 3
  Steering group meeting topics and format ............................................................................................. 3
  Steering group and meeting outcomes ................................................................................................. 4
Review of Literature .................................................................................................................................... 5
  Digital Technologies .................................................................................................................................. 5
  Communication .......................................................................................................................................... 5
  Electronic Resources ............................................................................................................................... 6
  Alternative locations and student welfare .............................................................................................. 7
Academic resiliency at other tertiary institutions ......................................................................................... 8
Resiliency Pilot Courses ................................................................................................................................ 9
  Course resiliency assessment .................................................................................................................. 9
  Pilot Courses ........................................................................................................................................... 9
  Pilot Course Outcomes .......................................................................................................................... 12
Recommendations ......................................................................................................................................... 13
  SEAD recommendations ....................................................................................................................... 13
  Department and school level recommendations ...................................................................................... 16
  Institutional Recommendations ............................................................................................................... 17
  Course level Recommendations ............................................................................................................ 20
Implementation Plan ................................................................................................................................... 24
References .................................................................................................................................................. 25
Appendix A: Course resiliency template ..................................................................................................... 26
Appendix B: Course Resiliency Assessment ................................................................................................. 33
Appendix C: Steering group meeting notes ................................................................................................. 45
Appendix D: Project summary presentation ................................................................................................. 55
Introduction

New Zealand’s capital city, and home of Victoria University of Wellington, is built on three major fault lines and is therefore subject to a high earthquake risk. To prepare for such a scenario, this project has been created to prepare academics, students and institutional support staff for continuity of learning and teaching in the event of significant disruption due to an earthquake or other means (e.g. pandemic). During a major disaster scenario, physical access to campus will be limited. This includes access to learning spaces, academic offices, the library and key support areas. To ensure educational continuity in an event of this magnitude, digital technologies, continuity planning and alternative physical locations will be critical to providing a teaching platform that can transition from the traditional face-to-face environment. Although individual Schools each have an earthquake response strategy, lessons from the University of Canterbury’s experience suggest that additional steps can be taken to prepare for teaching in the event of an earthquake (Mackey et al., 2012). This project aims to: (a) minimise long-term risk to teaching programmes in the event of a major earthquake or other disruption; (b) enhance the ongoing quality of teaching and learning; and (c) build capacity in teaching with technology amongst staff.

Preparation for earthquakes is also an opportunity to design and develop capability in the use of digital technologies for teaching in general. This aligns well with the University’s Digital Strategy and Vision for Learning and Teaching at Victoria (VUW CAD, 2011), which outlines goals for effective and seamless learning environments, programmes of study designed to maximise the impact of technology, technology facilitated student experience, and faculty-specific support and capability. A recent study shows that staff in the Faculties of Science, Engineering, Architecture and Design (SEAD) recognize the importance of, and have a positive attitude towards, the use of digital technologies in their teaching (VUW CAD, 2012). However, they are not confident in their technical skills and pedagogical knowledge to fully incorporate these technologies in their teaching. Development of staff capability with technology was therefore a critical component of this project.

Outcomes

The primary outcomes of this project are a collection of well researched, well-reasoned, and tested recommendations for increasing the resiliency of teaching and learning in the faculties of Science, Engineering, Architecture, and Design. Recommendations were developed in the project activities outlined in the next section.

Activities

As shown in figure 1, this project consisted of three major activities: research (review of literature and resiliency plans), monthly steering group meetings, and course resiliency pilot projects. Each project activity helped to identify and refine recommendations (e.g. recommendations formulated in steering group were refined in pilot courses). Thus final recommendations have been examined from multiple perspectives and contexts.
Figure 1. Relationship between project activities and recommendations.
SEAD Resiliency Steering Group Meetings

This project used a community of inquiry with representation of academic staff (listed below) from across the SEAD schools and also from different types of teaching (e.g. labs, large classes, tutorials, field courses, online, workshops). This community of inquiry helped to define resilience in teaching from various disciplinary perspectives as well as identify potential risks and solutions that were unique to the resiliency requirements for different types of teaching. The steering group also included members from key VUW stakeholders (ITS, CAD) and sought the expertise of institutional and community partners including: Jeff Munn & Stephanie Cottrill-VUW office of emergency management and business continuity planning, Maria Cobden-VUW associate director of communications, Jodye Tomalin- Greater Wellington Regional Council Emergency Management. The primary outputs of these group meetings were specific recommendations about how to create academic (teaching) resiliency throughout SEAD and more widely across VUW. Members of the steering group also participated in resiliency pilot courses (see section on pilot courses).

SEAD academic resiliency group members:

Tim Archie- Flexible and Resilient Teaching Project Research Fellow
Rhian Salmon- Science in Context
Peter Ritchie- School of Biological Sciences
Stuart Marshall- Engineering and Computer Sciences
Mairead de Roiste- School of Geography, Environment, and Earth Sciences
Suzanne Boniface- School of Chemical and Physical Sciences
Richard Arnold- School of Mathematics, Statistics, and Operation Research
Leon Gurevitch- School of Design
Paul Jose- School of Psychology
Irina Elgort- Centre for Academic Development
Jonny Flutey- ITS
Beth Smith- ITS
Sarah Hoyte- ITS
Craigie Sinclair- Record Services

Steering group meeting topics and format

In the six monthly steering group meetings we identified key areas for making teaching and learning in SEAD resilient to disruptions caused by earthquakes or other means. The first three meetings concerned defining the scope of the project and gaining an understanding of the VUW emergency response plan and business continuity plans, as well as discussion about how this project would complement these existing plans. The remainder of the monthly meetings were based on the specific topics listed below:

July- Introductions and overview
August- VUW business continuity overview, GWRC emergency management response
September- VUW emergency response plan
October – Communication
November – Electronic resources
December- Review of preliminary recommendations

Prior to each meeting, a research summary document was sent to each steering group member which contained:

- A summary of the research findings about University of Canterbury earthquake response and recovery specific to the topic of study for the meeting.
- A list of discussion points derived from the research findings.
- A list of possible recommendations to be discussed.

Generally, each meeting started with an overview of research findings, followed by a presentation from individuals with expertise internal or external to Victoria as appropriate to the topic. This was followed by a discussion of key points and considerations. The last part of the meeting was dedicated to formulating recommendations related to the topic and discussion. Please see appendix C for notes from each meeting.

**Steering group and meeting outcomes**

The primary outcomes of these meetings were recommendations tailored to the types and contexts of courses found within SEAD. Additionally, participating members likely gained knowledge of resiliency strategies at the course, school, and institutional level. In the event of a disruption, steering group members will likely be effective in coordinating recovery both in their own teaching, within their school or department, and across SEAD (see recommendation 1.3 and implementation plan).
Review of Literature

In this section we present a summary of key findings of the University of Canterbury’s response and recovery to the earthquakes of 2010 and 2011. The primary sources consist of two UC reports (Seville et al., 2011, 2012) and two academic articles (Mackey et al., 2011, 2012). Each source provided an overview of the response and recovery, and provide key considerations, lessons, and recommendations for other institutions.

Digital Technologies

- The use of digital technologies were an integral component to the recovery of teaching following the 2011 earthquake disruption at the University of Canterbury.
- Many lecture based courses used a flipped approach. Digital technologies such as podcasts and other means of recorded lectures were used for lecture delivery, so that face-to-face time could be used for class discussions, rather than lecturing. Lecture delivery in alternative locations, such as within the tent city was ineffective due to the proximately of other courses and sound (inclement weather/other lecturers).
- The LMS was used a primary means of communication.
- Electronic assessment replaced paper based assessments; including final exams that were disrupted due to aftershocks.
- UC recommended preparing for disruptions to teaching by integrated digital technologies into teaching to improve teaching and increase ability to teach as normal in a disrupted environment.

Communication

- The primary focus of the initial response and recovery following the February 2011 earthquake at the University of Canterbury was establishing and maintaining communication with staff and students.
- A student survey following the earthquakes ranked communications as one of the core strengths of UC’s response.
- IT infrastructure was undamaged allowing for use of familiar communication channels including UC webpage, email, and Learn (equivalent to Blackboard at VUW).
- Multi-level communication: institution, programme, course level.
- Two major institutional communications channels: official UC website and UC Facebook page. These communication methods complement each other well. The official website can provide official updated information, while the Facebook page allows students and staff to provide information back the University.
- UC created a policy that the official website was the official source of “truth”. With many different communication channels operating simultaneously, the website had the most control and could be updated quickly.
- The experiences of September 2010 had taught the university the importance of referring all staff and students to the official UC website for key communications. This strategy ensured an organised flow of clear messages. Information was also relayed by virtual and
real social networks, but there was no sure way of knowing how many students were missing vital communications.

- To use social media effectively requires a huge amount of resources and energy to sustain.
- To ensure consistency, all communications needed approval and were often delayed. As a result, by the time some messages were approved they were no longer relevant or needed to be updated. Academic Pro Vice Chancellors could not communicate formally with their staff without messages being approved, which complicated their ability to provide effective leadership.
- Program coordinators sent out news updates via the LMS (Blackboard equivalent).
- Some schools/colleges had their own communication channels/networks.
- Student reported being overwhelmed at times with the number of messages they were receiving via email and the LMS (Blackboard equivalent).
- Daily UC messages were sometimes unnecessarily wrong and it was hard to determine which parts of the communication were more meaningful than others.
- Currently, references to the earthquake have been purposefully left off the university home page - it was decided that the earthquakes should not be a defining characteristic of the University and may not be the best marketing strategy.
- The UC emergency management webpage provides resources of what to do in an earthquake or other disaster and includes a section about “where to find information”. This page indicates that “a number of sources may be used to provide information”, but the primary method is the UC homepage.

**Electronic Resources**

- The major difficulty in this disaster context was the lack of opportunity to prepare first-year students for blended learning prior to the need for them to engage in this mode, and the associated complications of offering that preparation and support in fully online mode.
- The catalysts for increased adoption of blended learning were the lack of physical teaching spaces and the problems that had to do with assembling large numbers of students in tents and other unconventional or ad hoc teaching venues.
- Some courses were launched in fully online mode, while others blended online learning with on-campus sessions in tents and safe venues.
- Physical spaces were scarce, and online pedagogies were essential for "restart" teaching where virtual classrooms provided not just content delivery, but also a place for students to interact and ask questions.
- Face-to-face time was reserved for workshops, hands-on activities, and discussions to explore what had been presented online. The online environment provided course content supported by new multi-modal resources including podcasts and video demonstrations.
- Aftershocks on June 13, 2011 prompted a university-wide move to replace exams and tests with take-home or online tests/assignments so as to avoid having to have large numbers of students sitting in lecture theatres.
• Staff recognized that the online environment was needed to promote interaction, connections, and a sense of community.
• Effective use of electronic resources requires organizational understanding and capability for blended and online learning already exists, along with appropriate infrastructure as well as technical and student support mechanisms to facilitate its use.

**Alternative locations and student welfare**

• A four-pronged approach was used to get teaching underway, using field trips, teaching in tents, off-site teaching and online learning.
• After the initial restart- most campus buildings were unavailable. There was a need for alternative locations for face to face teaching and flexibility in teaching to accommodate students who could not access the UC or alternative locations by choice and/or circumstances.
• A “tent city” allowed for the continuation of face to face teaching, however, this time was limited necessitating the use of the LMS for teaching activities (lectures via podcasts, assessments, discussion, etc.)
• Online learning systems don’t negate the desire from both students and academics for face-to-face interactions. People reported a sense of isolation learning alone. Even when video pod-casts of lectures were offered online, most students still chose to attend the 'live' lecture whenever they could.
• People are now using online learning systems in different ways. Prior to the earthquakes, 42% of all courses had some online learning components to them; this has now increased to 58 – 60% of all courses. Most importantly though, most large, first year courses are using at least some components of online learning.
• It is important to retain a sense of what sort of learning institution we are and want to be – do we really want to be an online university? Students were accepting of the increased use of online learning given the situation. They may not be so accepting in other situations.
Academic resiliency at other tertiary institutions

Academic resiliency, also referred to as educational continuity, learning continuity, and instructional continuity refer to the ability of an organisation to continue mission critical academic functions in the event of a disruption with little or no access to campus facilities. We critically examined the academic resiliency plans of over 20 institutions in the United States, Canada, and Australia. In our review we found that the majority of plans were created within the last 5 years as a result of the threat of H1N1 flu outbreak of 2009. However, all plans were generalized to accommodate academic continuity in a wide range of possible disruptions (man-made and natural disasters, and pandemics). All of the academic resiliency plans we examined focused on the use of digital technologies in the provision of teaching in the event of a disruption and

Common academic continuity strategies included:

- **Planning and implementation:** Common elements of an academic continuity plan include: A course level checklist that includes contingencies for communication, lecture delivery, course content, and assessments. If there are no contingencies for specific course elements, then a proposed action must be taken to address the lack of readiness. Once the action item(s) are completed, then the course will be approved by a department head or head of school ensure that the course has the ability to continue in a disrupted scenario. Over 80+ institutions in the US, Canada, and Australia are using a tool developed by the University of California Berkley and the Kuali Foundation to support academic continuity planning.

- **Baseline survey of academic staff to determine levels of preparedness for academic continuity.**

- **Requirement or suggestion that all classes have a minimum online presence in the institutions LMS.**

- **Dedicated website for academic continuity which includes the following information:**
  - Checklist and/or quiz to determine the degree to which individual courses/instructors are prepared for teaching.
  - Preparation instructions and procedures for communicating with students in the event of a disruption.
  - A list of possible continuity options and with links on how to use them (technical and pedagogical aspects). Resources usually include institution specific tutorials, guides, and external resources (e.g. blackboard).
  - Information on workshops related to the effective use of academic continuity tools such as blackboard, echo360, blackboard collaborate, etc.
  - Contact information on how to get one on one help from IT, instructional designers, etc.

- **Drill or continuity exercise to test the effectiveness of course level continuity plans.**

- **Dedicated personnel such as an “academic continuity coordinator” to initiate and implement course, school, faculty, and intuitional level plans.**
Resiliency Pilot Courses

The primary purpose of this project was to create actionable recommendations for increasing teaching resiliency within SEAD. To ensure that the recommendations we developed would work, we piloted resiliency recommendation across a wide range of courses with SEAD (table 1). In consultation with the academic resiliency steering group, we piloted specific resiliency options that would make individual courses more resilient (e.g. electronic assessments) as well as piloting the process by which courses were made resilient (e.g. course level resiliency planning using the course resiliency assessment).

As shown in table 1 (see below), we selected pilot courses from each school in SEAD (except from Architecture and Design), as well as from differing course types (size, format, year). We used the course resiliency assessment to determine how resilient each course was, and to help determine which aspects of the course could be altered to improve resiliency.

Table 1. Resiliency pilot courses by course type.

<table>
<thead>
<tr>
<th>Course Type</th>
<th>Large</th>
<th>Small</th>
<th>Lab</th>
<th>Fieldwork</th>
<th>Blended</th>
<th>Distance</th>
<th>Online</th>
</tr>
</thead>
<tbody>
<tr>
<td>MSOR</td>
<td>STAT193</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>SGEES</td>
<td>GEOG215</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>ECS</td>
<td>COMP102</td>
<td>SWEN303</td>
<td>x</td>
<td>x</td>
<td></td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>SCIE</td>
<td>x</td>
<td>x</td>
<td>x</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>PSYCH</td>
<td>PSYCH232</td>
<td>PSYC232</td>
<td>x</td>
<td></td>
<td>SCIE211</td>
<td></td>
<td></td>
</tr>
<tr>
<td>ARCH &amp; Design</td>
<td>No pilot projects selected for Architecture and Design</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>SBS</td>
<td>BIOL329</td>
<td>BIOL329</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>SCPS</td>
<td>CHEM113</td>
<td>CHEM114</td>
<td>CHEM113</td>
<td>CHEM113</td>
<td>CHEM114</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Course resiliency assessment

The course resiliency assessment is a tool (Appendix B) designed to determine the level of resiliency for individual courses. The assessment uses a wide variety of widely accepted resiliency indicators (derived from our review of resiliency plans from other institutions) to identify specific course elements that could be made more resilient. We applied the resiliency assessment to each of the pilot courses. Table 2 highlights the resiliency of each pilot course according to the major resiliency indicators.

Pilot Courses

In this section we describe the individual pilot courses and the resiliency strategies we identified and/or employed to improve resiliency.
### Table 2. Pilot course resiliency assessment

<table>
<thead>
<tr>
<th></th>
<th>STAT 193</th>
<th>GEOG215</th>
<th>SWEN303</th>
<th>CHEM113 &amp; CHEM114</th>
<th>SCIE211</th>
<th>BIOL329</th>
<th>PSYC232</th>
</tr>
</thead>
<tbody>
<tr>
<td>Laptop computer that can run your teaching applications and software</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Teaching files backed up or stored on the cloud or another external location</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Essential teaching resources outside office</td>
<td>Most</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Teaching resources in digital format</td>
<td>Most</td>
<td>Yes</td>
<td>Yes</td>
<td>Most</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Course communication channels</td>
<td>Blackboard, course webpage</td>
<td>Blackboard VUW email</td>
<td>Blackboard</td>
<td>Blackboard VUW email</td>
<td>Blackboard VUW email</td>
<td>Blackboard VUW email</td>
<td>Blackboard VUW email</td>
</tr>
<tr>
<td>Flexible lecture delivery</td>
<td>V-stream currently used to record all lectures</td>
<td>Staff have capability to flip lectures</td>
<td>Staff have capability to flip lectures</td>
<td>Staff have capability to flip lectures</td>
<td>lectures recorded on V-Stream</td>
<td>Instructor has capability to flip lectures</td>
<td>No</td>
</tr>
<tr>
<td>Flexible tutorial delivery</td>
<td>No- need a tool such as blackboard collaborate</td>
<td>NA</td>
<td>No- need a tool such as blackboard collaborate</td>
<td>NA</td>
<td>NA</td>
<td>NA</td>
<td>NA</td>
</tr>
<tr>
<td>Flexible lab delivery</td>
<td>NA</td>
<td>NA</td>
<td>NA</td>
<td>No</td>
<td>NA</td>
<td>Yes- Simbio virtual labs</td>
<td>No- need a tool such as blackboard collaborate</td>
</tr>
<tr>
<td>Electronic assignments</td>
<td>None</td>
<td>Yes</td>
<td>All</td>
<td>No</td>
<td>No</td>
<td>All</td>
<td>Yes</td>
</tr>
<tr>
<td>Electronic exams</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>Quizzes, but not exams</td>
<td>Yes</td>
<td>No, but instructor has capability to create these</td>
<td>Tests but not final exam</td>
</tr>
</tbody>
</table>
STAT193 Statistics for the Natural and Social Sciences

For this large (700 students per trimester) first year lecture course, we developed a Blackboard based term test, which does not require students to be physically present and can be done asynchronously. This electronic version will benefit staff as well because many questions can be auto-marked by blackboard saving several hours of work.

GEOG215 Introduction to Geographic Information Systems (GIS) and Science

For this medium sized course, we developed a blackboard based assessment process to replace paper submissions of in term course work. The students can now upload maps created in a GIS program (a fundamental learning objective of the course) as well as provide written answers online. This combination of features has only been possible since the recent blackboard update. The amended assessment provides students with greater flexibility in submitting assessments, thus making this aspect of the course more resilient.

SWEN303 User Interface Design

In this third year software engineering course many of the learning objectives are accomplished through student projects. Student rely heavily on tutorials where the instructor can demonstrate programming. Using a videoconferencing tool such as blackboard collaborate would allow remote access for students unable to attend the tutorial, and can enhance learning by allowing students to review the tutorial at a later time.

CHEM113 Concepts of Chemistry & CHEM114 Principles of Chemistry

Courses with a lab component are perhaps the most difficult to make resilient. Chemistry labs have the potential to be very dangerous in the event of an earthquake and may not be available for an extended period. We are researching virtual labs, recording lab activities, and using remote connections with other labs, and the use of alternate labs (primarily other institutions) as potential resiliency options. Staff are skeptical that these solutions (besides the use of alternate labs) are not as effective as traditional lab experiences in fulfilling course learning objectives. We have converted many paper based quizzes into electronic quizzes using go soapbox.

SCIE211 Contemporary Issues in Science and Society

This second year course is 100% online on Blackboard, and resilient in most respects. However, for many students, this is their first online course, which requires students to develop some basic capabilities to use course tools. We have developed, instructional videos to help students learn how to navigate the course and commonly used tools such as wikis and blogs. However, like all other pilot courses, there is no way to actively contact students (e.g. SMS, or push notifications through an app).

BIOL329 Evolution

This third year lecture and lab course is resilient in most respects. The instructor, Peter Ritchie, is well versed in pedagogy that incorporates the use of digital technologies particularly in the biological sciences. The course uses virtual lab assignments from Simbio, allowing students to
do the labs from anywhere and anytime as long as they have a computer and internet connection. Virtual labs would be effective in the every teaching disruption scenario, including the most severe and prolonged scenarios.

*PSYCH232 Research Methods in Psychology*

This large format lecture and lab course could be made more resilient by implementing an alternative lecture capabilities and alternative lab capabilities. At a minimum lectures could be recorded using V-stream, however the academic staff did not have the capacity to implement this option. Additionally, an ideal alternative to the lab component of the course would be to have the ability to have a synchronous web based discussion platform where students can interact with the lab instructor. An ideal tool would be blackboard collaborate, but VUW does not have this add-on with its current license.

**Pilot Course Outcomes**

We used the resiliency assessment tool to determine the level of resiliency for all the pilot courses and to identify course components that could be made more resilient. Our aim was to implement resiliency strategies that also had the potential to improve teaching in non-disrupted environments as well and/or increase efficiency (e.g. reduce grading time and manpower). Additionally, an electronic (qualtrics) based version of this assessment can provide individual feedback to staff participants. Staff can receive feedback about which aspects of their course could be more resilient and this feedback will include links to a range of CAD and other resources to help implement selected resiliency options in the courses taught by staff. This aspect of the assessment will be useful when implementing course level resiliency across the range of SEAD courses (see implementation plan).

As shown in table 2, we found that nearly every pilot course required minimal to substantial changes to be made resilient. However with the appropriate resources (a person to guide planning, course resiliency planning template, and a person with expertise in digital technologies) these changes could be identified and implemented efficiently.

While we did not implement resiliency options in all of the pilot courses, we did ensure that our process and tools for assessing and implementing course level resiliency planning would be effective. Thus the pilot courses helped to support the major recommendations of this of implementing course level resiliency planning (recommendation 1.1) and having the necessary human resources to support this planning and implementation (recommendation 1.2).
Recommendations

The following recommendations are based on: (a) monthly teaching resiliency steering group meetings, (b) a review of literature (c) a review of 20+ university resiliency/academic continuity plans. Recommendations are largely focused on the use of digital technologies in teaching as a means to increase teaching resiliency in the event of a disruption to teaching. While the use of digital technologies may not be the preferred choice for all teaching modes (e.g. labs and studios), the use of digital technologies maximizes resilience for all disruption scenarios especially the most severe and prolonged scenarios. Additionally, implementation of these recommendations will help to build staff and student capacity in the use of digital technologies. Our primary recommendation is 1.1 with most other recommendations designed to support this primary recommendation.

SEAD recommendations

1.1 Develop and implement course, school, and faculty level academic resilience plans. Planning and implementation will be supported as outlined in recommendation 1.2. Academic staff are responsible for the creation and implementation of continuity planning for each course they teach. Heads of school will be responsible for approving course level resiliency plans and school level resiliency plans. School level plans will identify critical courses: large-enrollment course, or offered once a year, or required by graduating students, or is a pre-requisite for a major or part of a sequence. Critical courses would be prioritized over other courses in implementing resiliency plans. Resiliency plans must meet minimum standards provided in Course Resiliency Plan Template (Appendix) and be approved by heads of school. This would be a two stage process. The first stage identifies what resources or capabilities are required for individual courses and academics. In the second stage, staff will gain (e.g. through workshops, one on one assistance) the capability and/or resources needed to make their teaching resilient and will take the steps necessary to make their teaching resilient. This process could be formalized by making this an annual reporting exercise and could be incorporated into the annual PDCP reviews. Rationale: Making academic staff responsible for resiliency (with appropriate support) of the courses they teach will ensure that staff are aware of potential resiliency options and identify options that are congruent with their style of teaching, the discipline of subject the teach, and the teaching format (lecture, lab, tutorial, etc.).

1.2 Employ a SEAD Resilience Coordinator (12 month contract) to assist schools and individual academics in creating course and department resilience plans outlined above. Additionally, this person would also help to develop the Resilience in Teaching website, associated content, and resilience workshops. Rationale: Several other universities have similar positions to create and implement resiliency plans.

AND
Employ at least one full time instructional designer to work collaboratively with faculty to identify appropriate discipline specific pedagogical approaches and corresponding technology to enhance student engagement and learning, and improve resiliency. Alternatively, this role could be filled by ITS or CAD, but would need to understand the pedagogical approaches and corresponding digital technologies specific to disciplines within SEAD. **Rationale:** Staff have varying levels of capacity and motivation to implement resiliency options in their teaching. Instructional designers have the pedagogical and technical expertise to help develop staff capability on an individual basis or through a series of workshops. [http://etech.as.ua.edu/academic-continuity/](http://etech.as.ua.edu/academic-continuity/)

1.3 Development of earthquake teaching recovery team within SEAD. Members of this group will assist their department in implementing resiliency options in the event of a disruption. They can advise staff on appropriate strategies and tools needed to resume teaching. Members of this group would also meet to discuss areas where they may help or get help from other departments. **Rationale:** This group would allow for quicker and more effective recovery. General staff would benefit from the expertise and would not have to do the leg work of figuring out which strategies and tools to use. The collective group will be able to communicate needs more quickly and orderly to ITS, library, administration. This group is ideally part of existing committee such as the earthquake resiliency steering group or the existing teaching and learning committee.

1.4 Development of a SEAD “Academic Resiliency” website. This website would contain the following features and information and would provide the resources required for course level resiliency planning outlined in recommendation 1.1:

- Checklist and/or quiz to determine the degree to which individual courses/instructors are prepared for teaching in the event of disruption.
- Guidelines for communicating with students in the event of a disruption.
- A tool box of possible resiliency options and with links on how to use them (technical and pedagogical aspects). Each resiliency option will be supported by: tutorials, guides, and external resources (e.g. blackboard website and blackboard TV). The tool box will also include resources on how to effectively match selected technologies with appropriate pedagogy. **Rationale:** While many of these resources are already exist in the CAD innovation incubator, they could be more easily accessed by staff on a dedicated academic continuity webpage.
- Information on workshops related to the effective use of academic continuity tools such as blackboard, echo360, Blackboard collaborate, etc.
- Contact information on how to get individualised help from ITS and CAD.
- Testimonials written by academic staff which includes a description of how they have made their courses resilient using digital technologies and how their everyday teaching has been enhanced and/or streamlined (timed saved marking exams) as a result of implementing digital technologies. **Rationale:** Academic staff will be more likely to implement resiliency options in their courses if they
see that other academics are doing this, how it was implemented, and that there is value in doing so.

**Rationale:** This proposed website and content contains standard features of academic continuity plans at other institutions which have critically examined the need for contingencies if the physical campus was closed. The premise of these websites is that effective teaching resiliency requires planning for contingencies in communication and teaching before a disruption occurs. Academic staff will be most prepared if they have spent some time identifying and considering the contingencies for teaching in a disrupted environment.

**Example:**

Georgetown University

[http://instructionalcontinuity.georgetown.edu/](http://instructionalcontinuity.georgetown.edu/)

1.5 Implementation of a SEAD campaign to prepare staff for a disruption which encourages integration of resiliency options in their teaching by using the proposed VUW Teaching Resiliency website outlined in recommendation 1.1. This campaign should be initiated by academic staff that have already developed a course level resiliency plan.

1.6 Conduct an academic continuity exercise for each school. The University of Alabama has created a protocol for conducting such an exercise which includes the following activities: In preparation for their exercise, departments should create a list of “mission-critical” things that they would like to try to accomplish from a remote location during the exercise—these may be administrative and/or academic. Departments should then write a report that describes their experience with the exercise—what worked, what didn’t, and a plan for addressing problems and/or shortcomings in event of an actual disruption. **Rationale:** Planning cannot account for unexpected problems that will likely occur during an actual or simulated disruption. [http://etech.as.ua.edu/academic-continuity/](http://etech.as.ua.edu/academic-continuity/)
Department and school level recommendations

2.1 CAD
  2.1.1 Conduct a workshop series on teaching resilience. Topics and formats will be determined by results from the staff resiliency assessment. Institutional examples (Georgetown University, 2014) :
  https://wiki.uis.georgetown.edu/display/BBSUPPORT/Workshops

2.2 ITS
  2.2.1 Victoria University of Wellington homepage to be hosted off-site. Rationale: University of Canterbury use an off-site hosted website to provide updated information to staff, students, and parents.

  2.2.2 Blackboard to be hosted off-site. Rationale: In the event of a disaster, blackboard will still be operational, allowing for continued communication through this medium.

  2.2.3 ITS to secure the availability of a large amount of wireless USBs to be available on short notice. Rationale: Internet connectivity is essential to all resiliency options, thus faculty and students will need access. Cabled networks will likely be damaged, but cellular networks should be operational relatively quickly (lifelines report).

  2.2.4 ITS to create a blackboard course for every course. Rationale: In the event of a disruption, blackboard can be used a communication and teaching tool. If a blackboard course is created in advance of disruption, ITS will not have added pressure of creating courses on short notice. Academic staff will be able to use blackboard as repository for course materials and communications at a minimum. See recommendation 4.1.7.

2.3 Faculty of Engineering/MSOR

  2.3.1 Conduct a vulnerability assessment of the Faculty of Engineering and MSOR network and consider using blackboard to store course content. Rationale: Faculty of engineering has its own network and utilizes internally hosted webpages to store course content, but the resiliency of this network to an earthquake or similar scenario is unknown.
Institutional Recommendations

3.1 Development of course, school, and faculty level academic resilience plans. Academic staff are responsible for the creation and implementation of continuity planning for each course they teach. Continuity plans must meet minimum standards provided in Course Continuity Planning Template (included in final report) and be approved by heads of school. This would be a two stage process. The first stage identifies what resources or capabilities are required for individual courses and academics. In the second stage, staff will gain (e.g. though workshops, one on one assistance) the capability and/or resources needed to make their teaching resilient. This process could be formalized by making this an annual reporting exercise using a tool developed by the University of California Berkley and the Kuali Foundation and currently used by 80+ institutions in the US, Canada, and Australia. Rationale: Making academic staff responsible for resiliency of the courses they teach will ensure that staff are aware of potential resiliency options and identify options that are congruent with their style of teaching, the discipline of subject the teach, and the teaching format (lecture, lab, tutorial, etc.).

3.2 Development of a VUW “Academic Resiliency” website. This website could be located on either the ITS, CAD, or Emergency management websites. This website would contain the following features and information and would aid course level resiliency planning outlined in recommendation 3.1: Checklist and/or quiz to determine the degree to which individual courses/instructors are prepared for teaching in the event of disruption.

- Guidelines for communicating with students in the event of a disruption.
- A tool box of possible resiliency options and with links on how to use them (technical and pedagogical aspects). Each resiliency option will be supported by: tutorials, guides, and external resources (e.g. blackboard website and blackboard tv). The tool box would also include resources on how to effectively match selected technologies with appropriate pedagogy. Rationale: Many of these resources are already exist in the CAD innovation incubator, but could be more easily accessed by staff on a dedicated academic continuity webpage.
- Information on workshops related to the effective use of academic continuity tools such as blackboard, echo360, Blackboard collaborate, etc.
- Contact information on how to get individualised help from IT, instructional designers, etc.
- Testimonials written by academic staff which includes a description of how they have made their courses resilient using digital technologies and how their everyday teaching has been enhanced and/or streamlined (timed saved marking exams) as a result of implementing digital technologies. Rationale: Academic staff will be more likely to implement resiliency options in their courses if they see that other academics are doing this and that there is value in doing so.
Rationale: This proposed website and content contains standard features of academic continuity plans at other institutions which have critically examined the need for contingencies if the physical campus was closed. The premise of these websites is that effective teaching resiliency requires planning for contingencies in communication and teaching before a disruption occurs. Academic staff will be most prepared if they have spent some time identifying and considering the contingencies for teaching in a disrupted environment.

3.3 Implementation of a VUW campaign to prepare staff for a disruption which encourages integration of resiliency options in their teaching by using the proposed VUW Teaching Resiliency website outlined above. This campaign should be initiated by academic staff, perhaps through the teaching community “Vic Teach”. Rationale: There are two main approaches to academic staff involvement in academic continuity/resiliency. Some institutions encourage staff to plan for resiliency, some mandate planning for resiliency, and some do both. Because academic staff are the front line providers for mission critical teaching activities, it is important to staff to understand the importance and to prioritize resiliency planning.

3.4 Require all new VUW students must take a blackboard tutorial prior to registering for the second trimester of study. This mandatory tutorial would accomplish two objectives: a) to require students to demonstrate competency in basic blackboard functions, b) an opportunity for students to report accurate contact information. Rationale: Many of the proposed course level resiliency options are in the blackboard environment, so a basic knowledge of the platform is necessary for these options to be effective. An automated tutorial would shift the burden of basic blackboard training from teaching staff and would allow for standardized content.

3.5 Implementation of VUW mobile app- this app would allow for better communication to students via push notifications would provide access to blackboard mobile. This app is already developed by Blackboard and can be implemented quickly. Rationale: Most students own smart phones and the networks they rely on are fairly robust. In a worst-case earthquake scenario, cellular networks could be restored in several days (lifelines report).

3.6 Student photos to be attached to student records. Rationale: Academic staff need to be able to identify students in their courses. Staff currently have to take their own pictures during a class period, which reduces teaching time and administrative duties. For large enrollment courses this is not feasible.

3.7 Create mutual aid agreements with other institutions (tertiary institutions and CRI’s). Heads of schools at various institutions could identify capabilities of other institutions before a disaster occurs. Rationale: For an extended interruption, alternate locations may be the only options for specialized courses such as design studios.
3.8 Conduct a campus wide emergency drill. **Rationale:** This exercise would highlight strengths and weakness at institutional, department, and course levels in the response to a disruption and how teaching might resume in a disrupted environment.
Course level Recommendations

4.1 General recommendations for all courses

4.1.1 Teaching staff to develop and share a communication and resiliency plan (Appendix A) with students on first day of class and is included in course outline. **Rationale:** Course flexibility and alternative communication channels are only effective if students know about them.

4.1.2 Consider creating fully online or hybrid versions of critical courses. **Rationale:** In the event of a disruption students in traditional courses could be switched into an online format for all or part of the course and the content would be of high quality and already developed. In business as usual scenarios, online classes help to increase student populations (part of VUW strategic plan) without physical classroom constraints.

4.1.3 Course outline to include the following statement: In the event of a disruption to the normal class schedule or planned activities for this course, the format of this course may be modified to enable completion of the course through other means, including other locations and online work. If this occurs, you will be provided with an addendum to the syllabus including full instructions. **Rationale:** Course outlines should allow for the use of resiliency options that may not be otherwise used under normal circumstances.

4.1.4 Faculty to use Blackboard and Victoria email as primary means of communication with students. **Rationale:** According to the Wellington Lifelines report, cellular communications (including data) could be restored to an operational level in 10 days given a worst case scenario (shallow 7.5 magnitude earthquake with epicentre in CBD) These communications channels will be familiar and accessible to almost all students.

4.1.5 Academic staff to use a variety of communication channels to communicate with students with at least one non-Victoria University channel- e.g. Facebook. **Rationale:** In the event VUW communications are unavailable, outside channels may be unaffected. Additionally, social media such as Facebook can be used to facilitate student discussion and promote of sense a community- both of which are positively correlated with student outcomes such as satisfaction and perceived learning.

4.1.6 Use of informal communication channels such as telephone. **Rationale:** Telephone services are perhaps the most robust communication channel (lifelines report) and these types of communication do not have to wait for approval.
4.1.7 Implement and support CAD proposal for minimum online standards blackboard standards in all SEAD courses.

4.1.8 Encourage staff to digitize all teaching resources not currently contained in blackboard.

4.1.9 Encourage staff to backup all digital resources (including those on blackboard) to using a third party service or non-VUW network location.

4.1.10 Include a discussion forum as a part of minimum course presence in Blackboard. **Rationale:** At a minimum a general class discussion forum allows all students to ask questions and provide feedback about the course with the benefit that all others student will see the course coordinator’s response, so the same questions aren’t asked repeatedly. In the event of a disruption to teaching, this would be a good place for students to communicate with each other and the course coordinators.

4.2 Lectures

4.2.1 Use of V-Stream to capture current lectures. **Rationale:** staff can use this tool to use pre-recorded lectures or create and share new lectures with students remotely.

4.2.2 Use of videoconferencing tool such as blackboard collaborate in current lectures. **Rationale:** staff can use this to enhance current teaching by allowing students to view recorded lectures, allows students who may not be able to physically attend (e.g. sick students) to watch the lecture live and ask questions, and would ensure staff and student capability in the use of this tool in the event of a disruption.

4.3 Tutorials

4.3.1 Use blackboard collaborate or similar synchronous videoconferencing tool for current tutorials. **Rationale:** blackboard collaborate could be used to have a remote (instructor & students) tutorial sessions in a disrupted environment. This is would be the preferred videoconferencing utility because it can be seamlessly integrated into the current VUW blackboard environment. This tool could be used to enhance teaching and learning in a non-disrupted environment by allowing tutorial activities to be recorded and available for review by students who may have missed the tutorial or would like to review the material again.

4.3.2 Alternative locations may be a preferred option for staff and students, but should be complemented by more resilient digital technologies. **Rationale:** A level of disruption that requires the use of alternate facilities for teaching would likely correspond to wide spread damage in the greater community. It is reasonable to assume that not all students would have the capability or interest in using
alternative facilities for instruction. Resiliency options such as video conferencing and discussion boards, could be used as a stand-alone resiliency option is a severe disruption scenario and could be used in conjunction with alternative locations to ensure all students have access to learning opportunities in less severe disruptions.

4.4 Labs

4.4.1 Require lab course instructors to identify one or more alternatives to physical lab experiences. Flexible lab options include remote connection with labs at other institutions, virtual labs, pre-recorded lab activities. Selected alternative will be identified and outlined in course outline. These options could be supported by lab techs, CATs, instructional technologists/designers. **Rationale:** Many of the laboratory resiliency options can be implemented in advance of a disruption and may enhance student learning. For example, recorded lab activities would allow student to review lab procedures without having to physically come to campus and set up a complicated lab experiment.

4.4.2 Where applicable, store a minimal amount of retired lab equipment off-site to be used as a back-up until access can be regained to labs and equipment. **Rationale:** UC lab equipment was unavailable because labs were inaccessible. Having access to a limited selection of retired lab equipment off-site would allow for the possibility of immediately teaching some lab courses.

4.5 Fieldwork

4.5.1 Identify alternative local fieldwork locations to be used if transportation networks are affected or student needs do not allow for long distance travel. **Rationale:** many fieldwork courses could be conducted in local area with minimal modification to course content.

4.5.2 Fieldwork can be rescheduled to accommodate disruption. **Rationale:** depending on the type and severity of disruption, fieldwork may feasible (perhaps even more feasible) to re-start. UC used fieldwork opportunities immediately at the re-start and shifting classroom teaching to later in the semester allowing for buildings to be available and more time to adapt classroom teaching.

4.5.3 Where applicable, store a minimal amount of retired field equipment off-site to be used as a back-up until access can be regained to labs and equipment. **Rationale:** UC field equipment was unavailable because buildings were inaccessible. Having access to a limited selection of retired field equipment off-site would allow for the possibility of immediately teaching some field courses.
4.6 Studios

4.6.1 Where applicable, store a minimal amount of retired studio equipment off-site to be used a back-up until access can be regained to studios and equipment. **Rationale:** UC lab equipment was unavailable because labs were inaccessible. Having access to a limited selection of retired lab equipment off-site would allow for the possibility of immediately teaching some lab courses.
Implementation Plan

- Employ an academic resilience coordinator to support recommendations 1.1, 1.3, and 1.4.
- Academic resilience coordinator to organise and lead the teaching recovery team.
- Identify critical courses for each school within SEAD: resiliency coordinator to facilitate meetings for each school within SEAD to include heads of school, school teaching recovery representative, and school business continuity representative to identify critical courses and determine course level resiliency planning and implementation priorities.
- Academic resilience coordinator to guide academic staff in development of academic resilience plans for critical courses using the course resilience template (Appendix A).
- Academic staff and resilience coordinator to collaborate with an instructional designer (ITS and CAD) to implement the use of new pedagogy and technology to enhance teaching and increase resiliency.
- Academic resiliency coordinator to work with ITS and CAD to develop an Academic Resiliency website (recommendation 1.4). Content should include the course resilience template and/or online version (qualtrics). Content should be similar to what other universities have done (see recommendation 1.4, and the “academic resilience at other institutions” and references sections of this report).
- Course level resiliency planning in non-critical courses. Academic resiliency coordinator to implement course level resiliency planning and implementation in non-critical courses using workshops and individual assistance to academic staff. Instructional designer to support implementation pedagogy and technology needs.
- Annual update of resilience plans with emphasis on implementing new technologies and training.
References


Dabner, N. (2011). 'Breaking ground' in the use of social media: A case study of a university earthquake response to inform educational design with Facebook. The Internet and Higher Education. DOI: 10.1016/j.iheduc.2011.06.001


Wellington Lifelines Group ‘Restoration Times’ report – November 2012
https://www.elearning.uq.edu.au/services/academic-continuity-checklist
http://assett.colorado.edu/course-continuity-checklist/
http://www.uh.edu/instructionalcontinuity/for-faculty/forms/ic-checklist-faculty.pdf
http://teaching.uncc.edu/about-ctl/continuity-planning/start-term-checklist
Appendix A: Course resiliency template
Course Resiliency Plan

Course Name Here

Course information
Course Coordinator: Insert name here
Tutor: Insert name here
Trimester: 1, 2, 3
Course type: e.g. lecture and lab, tutorial, field course, studio, etc.
Average number of students enrolled: e.g., 200

Critical course status

<table>
<thead>
<tr>
<th>Question</th>
<th>Yes</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td>High enrolment course (200 or more students)?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Prerequisite for a major or sequence of courses?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Offered once per academic year?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Required to graduate?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Is there an online version of this course?</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

If answered yes to any of questions 1-4 then the course is considered critical unless an online version of the course exists.

Remote access to teaching materials and contact information

<table>
<thead>
<tr>
<th>Question</th>
<th>Yes</th>
<th>No</th>
<th>NA</th>
</tr>
</thead>
<tbody>
<tr>
<td>Instructor has a laptop or home computer that has necessary teaching applications?</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>USB cellular modem?</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>All teaching materials backed up to cloud storage?</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>E-book of text is available?</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hard copy of teaching materials outside of VUW?</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hard copy of student contact information?</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hard copy of VUW staff contact information?</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
### Online Course Presence

<table>
<thead>
<tr>
<th></th>
<th>Yes</th>
<th>No</th>
<th>NA</th>
</tr>
</thead>
<tbody>
<tr>
<td>Disruption course procedures</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(preferably in course outline)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Blackboard course presence</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Other online presence (specify)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Course outline</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Course readings</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Assignments</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Grades</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Tests</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Exams</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Communication with students

<table>
<thead>
<tr>
<th></th>
<th>Yes</th>
<th>No</th>
<th>NA</th>
</tr>
</thead>
<tbody>
<tr>
<td>Disruption communication plan</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Blackboard email</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Blackboard announcement</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>VUW email</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Other email (specify)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Text messaging</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Phone</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Facebook</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Twitter</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Other (specify)</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Need at least one non-VUW communication channel

### Lecture delivery

<table>
<thead>
<tr>
<th></th>
<th>Yes</th>
<th>No</th>
<th>NA</th>
</tr>
</thead>
<tbody>
<tr>
<td>Recorded using V-stream</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Recorded using other (specify)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>---------------------------------</td>
<td>---</td>
<td>---</td>
<td>---</td>
</tr>
<tr>
<td>Capability to record lectures (describe)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Capability to flip teaching (describe)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Synchronous lecture delivery (specify) e.g. google hangouts, skype, etc.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Other (describe)</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Discussion**

<table>
<thead>
<tr>
<th>Yes</th>
<th>No</th>
<th>NA</th>
</tr>
</thead>
<tbody>
<tr>
<td>Blackboard discussion board</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Videoconferencing tool (specify)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Wikis</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Blogs</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Other (specify)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Assessments**

<table>
<thead>
<tr>
<th>Yes</th>
<th>No</th>
<th>NA</th>
</tr>
</thead>
<tbody>
<tr>
<td>Assignments</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Quizzes</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Tests</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Exams</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Other (specify)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
### Tutorials

<table>
<thead>
<tr>
<th>Tool</th>
<th>Yes</th>
<th>No</th>
<th>NA</th>
</tr>
</thead>
<tbody>
<tr>
<td>Blackboard discussion board</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Videoconferencing tool (specify)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Wikis</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Blogs</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Other (specify)</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Labs

<table>
<thead>
<tr>
<th>Activity</th>
<th>Yes</th>
<th>No</th>
<th>NA</th>
</tr>
</thead>
<tbody>
<tr>
<td>Recorded lab activities (describe)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Video link to other university labs (describe)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Alternative locations (describe)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Virtual labs</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cache of retired field equipment off-site?</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Other (specify)</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Fieldwork

<table>
<thead>
<tr>
<th>Activity</th>
<th>Yes</th>
<th>No</th>
<th>NA</th>
</tr>
</thead>
<tbody>
<tr>
<td>Alternative locations (describe)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Alternative timing (describe)</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Cache of retired field equipment off-site

### Studios

<table>
<thead>
<tr>
<th></th>
<th>Yes</th>
<th>No</th>
<th>NA</th>
</tr>
</thead>
<tbody>
<tr>
<td>Studio cannot be replicated in an online environment (describe)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Requires specialized equipment located in VUW facilities (describe)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Alternative locations that have similar equipment (describe)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cache of retired equipment stored off-site</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Other (describe)</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
# Implementation plan

<table>
<thead>
<tr>
<th></th>
<th>Yes</th>
<th>No</th>
<th>NA</th>
</tr>
</thead>
<tbody>
<tr>
<td>Critical course</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Remote access</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Online course presence</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Communication</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Discussion</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Lecture delivery</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Assessments</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Tutorials</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Labs</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fieldwork</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Studios</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Appendix B: Course Resiliency Assessment
Resiliency Assessment

Do you have a laptop computer that can run your teaching applications/software?
- Yes (1)
- No (2)

Are your teaching files backed up or stored on the cloud or another external location?
- No-none of my files. (1)
- Yes, but only some of my files (2)
- Yes, about half of my files (3)
- Yes, most of my files (4)
- Yes, all of my files (5)

If you were unable to return to your office because of an earthquake, would you have the resources necessary to carry on your teaching activities?
- No, none of the required resources (1)
- Yes, but only some resources (2)
- Yes, but only about half of the resources (3)
- Yes, most of the resources (4)
- Yes, all of the resources (5)

If Victoria University gave you a choice between a laptop computer and desktop computer, which one would you choose?
- Desktop Computer (1)
- Laptop Computer (2)

Which communication channels do you use in your course?
- Blackboard (1)
- Email (2)
- Facebook (3)
- Twitter (4)
- text messages (5)
- none (6)
- other (7) ____________________

Which communication channels do you use the most your courses? (select one)
- Blackboard (1)
- Email (2)
- Facebook (3)
- Twitter (4)
- text messages (5)
- none (6)
- other (7) ____________________
In the event of a teaching disruptions such as an earthquake. How confident are you that you could communicate with students using these various communication forms?

<table>
<thead>
<tr>
<th>Communication Form</th>
<th>Very unconfident (1)</th>
<th>Somewhat unconfident (2)</th>
<th>Neither confident or unconfident (3)</th>
<th>Somewhat confident (4)</th>
<th>Very confident (5)</th>
<th>Not Applicable (6)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Blackboard (1)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Email (2)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Facebook (3)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Twitter (4)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Text messaging (5)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Other (6)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

In this section please tell us about the lecture courses in which you are the course coordinator. You will have the opportunity to provide information on each lecture course you teach. How many lecture courses do you coordinate yearly?

- None (1)
- 1 (2)
- 2 (3)
- 3 (4)
- 4 (5)
- 5 (6)
- 6 (7)
- 7 (8)
- 8 (9)

What is the name or course code of the first lecture course you will report on? (This question will become a drop down box with all possible course names.)

To what extent are non-digital and digital resources used in the lecture courses you teach?

- All resources are non-digital (1)
- Most resources are non-digital (2)
- Equal amounts of digital and non-digital resources (3)
- Most resources are digital (4)
- All resources are digital (5)
- I don't teach this type of course (6)
To what extent do you have remote access to your lecture resources?

- None of my resources can be accessed remotely (1)
- Some of my resources can be accessed remotely (2)
- About half of my resources can be accessed remotely (3)
- Most of my resources can be accessed remotely (4)
- All of my resources can be accessed remotely (5)
- Not applicable (6)

For the lecture course you are reporting on, how prepared are you to implement the following flexible learning options in the event of an earthquake?

<table>
<thead>
<tr>
<th></th>
<th>Not at all prepared (1)</th>
<th>Somewhat prepared (2)</th>
<th>Prepared (3)</th>
<th>Very prepared (4)</th>
<th>I currently use this option (5)</th>
<th>Not applicable (6)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Podcasts (1)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Recorded lectures</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>using Vstream (2)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Discussion boards (3)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Web based tests and</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>quizzes (4)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Web based assignments</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(5)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Video conferencing</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(Scopia, Blackboard</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Collaborate, Google</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>hangouts, etc.) (6)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Blogs (7)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Wikis (8)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Other (9)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
For the lecture course you are reporting on, how interested are you in implementing the following flexible learning options in advance of a disruption such as an earthquake?

<table>
<thead>
<tr>
<th>Flexible Learning Option</th>
<th>Not at all interested (1)</th>
<th>Somewhat interested (2)</th>
<th>Interested (3)</th>
<th>Very interested (4)</th>
<th>I currently use this option (5)</th>
<th>Not applicable (6)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Podcasts (1)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Recorded lectures using Vstream (2)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Discussion boards (3)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Web based tests and quizzes (4)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Web based assignments (5)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Video conferencing (Scopia, Blackboard, Collaborate, Google hangouts, etc.) (6)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Blogs (7)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Wikis (8)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Other (9)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Do you want to provide information about another lecture course?

- Yes (1)
- No (2)
In this section please tell us about the tutorial courses in which you are the course coordinator. You will have the opportunity to provide information on each tutorial course you teach. How many tutorial courses do you coordinate yearly?

- None (1)
- 1 (2)
- 2 (3)
- 3 (4)
- 4 (5)
- 5 (6)
- 6 (7)
- 7 (8)
- 8 (9)

What is the name or course code of the first tutorial course you will report on?

To what extent are non-digital and digital resources used in the tutorial courses you teach?

- All resources are non-digital (1)
- Most resources are non-digital (2)
- Equal amounts of digital and non-digital resources (3)
- Most resources are digital (4)
- All resources are digital (5)
- I don’t teach this type of course (6)

To what extent do you have remote access to your tutorial resources?

- None of my resources can be accessed remotely (1)
- Some of my resources can be accessed remotely (2)
- About half of my resources can be accessed remotely (3)
- Most of my resources can be accessed remotely (4)
- All of my resources can be accessed remotely (5)
- Not applicable (6)
For the tutorial course you are reporting on, how prepared are you to implement the following flexible learning options in the event of an earthquake?

<table>
<thead>
<tr>
<th>Option</th>
<th>Not at all prepared</th>
<th>Somewhat prepared</th>
<th>Prepared</th>
<th>Very prepared</th>
<th>I currently use this option</th>
<th>Not applicable</th>
</tr>
</thead>
<tbody>
<tr>
<td>Podcasts (1)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Recorded lectures using Vstream (2)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Discussion boards (3)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Web based tests and quizzes (4)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Web based assignments (5)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Video conferencing (Scopia, Blackboard Collaborate, Google hangouts, etc.) (6)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Blogs (7)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Wikis (8)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Other (9)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
For the tutorial course you are reporting on, how interested are you in implementing the following flexible learning options in advance of a disruption such as an earthquake?

<table>
<thead>
<tr>
<th>Flexible Learning Options</th>
<th>Not at all interested (1)</th>
<th>Somewhat interested (2)</th>
<th>Interested (3)</th>
<th>Very interested (4)</th>
<th>I currently use this option (5)</th>
<th>Not applicable (6)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Podcasts (1)</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>Recorded lectures using Vstream (2)</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>Discussion boards (3)</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>Web based tests and quizzes (4)</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>Web based assignments (5)</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>Video conferencing (Scopia, Blackboard Collaborate, Google hangouts, etc.) (6)</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>Blogs (7)</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>Wikis (8)</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>Other (9)</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
</tbody>
</table>

Do you want to provide information about another tutorial course?
- ☐ Yes (1)
- ☐ No (2)
In this section please tell us about the lab courses in which you are the course coordinator. You will have the opportunity to provide information on each lab course you teach. How many lab courses do you coordinate yearly?

- None (1)
- 1 (2)
- 2 (3)
- 3 (4)
- 4 (5)
- 5 (6)
- 6 (7)
- 7 (8)
- 8 (9)

What is the name or course code of the first tutorial course you will report on?

To what extent are non-digital and digital resources used in the lab courses you teach?

- All resources are non-digital (1)
- Most resources are non-digital (2)
- Equal amounts of digital and non-digital resources (3)
- Most resources are digital (4)
- All resources are digital (5)
- I don’t teach this type of course (6)

To what extent do you have remote access to your lab resources?

- None of my resources can be accessed remotely (1)
- Some of my resources can be accessed remotely (2)
- About half of my resources can be accessed remotely (3)
- Most of my resources can be accessed remotely (4)
- All of my resources can be accessed remotely (5)
- Not applicable (6)
For the lab course you are reporting on, how prepared are you to implement the following flexible learning options in the event of an earthquake?

<table>
<thead>
<tr>
<th>Option</th>
<th>Not at all prepared (1)</th>
<th>Somewhat prepared (2)</th>
<th>Prepared (3)</th>
<th>Very prepared (4)</th>
<th>I currently use this option (5)</th>
<th>Not applicable (6)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Use previously recorded lab activities (1)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Virtual labs (2)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Use electronic link to other university labs (3)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Resume lab activities at an alternate location (4)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Other (5)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

For the lab course you are reporting on, how interested are you in implementing the following flexible learning options in advance of a disruption such as an earthquake?

<table>
<thead>
<tr>
<th>Option</th>
<th>Not at all interested (1)</th>
<th>Somewhat interested (2)</th>
<th>Interested (3)</th>
<th>Very interested (4)</th>
<th>I currently use this option (5)</th>
<th>Not applicable (6)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Use previously recorded lab activities (1)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Virtual labs (2)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Use electronic link to other university labs (3)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Resume lab activities at an alternate location (4)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Other (5)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Do you want to provide information about another lab course?
- Yes (1)
- No (2)
Please indicate the level to which you agree or disagree with the following statements.

<table>
<thead>
<tr>
<th></th>
<th>Strongly disagree (1)</th>
<th>Disagree (2)</th>
<th>Neither agree nor disagree (3)</th>
<th>Agree (4)</th>
<th>Strongly agree (5)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Implementing flexible teaching options in the courses I teach has or would improve student learning. (1)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>I am interested in implementing flexible learning options in my teaching. (2)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>I would need considerable help to implement any flexible learning option in my teaching. (3)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>I am interested in helping colleagues with implementing flexible learning strategies in their teaching (4)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>In the event of an earthquake I would be effective in assisting others with implementing flexible learning options in their courses. (5)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Appendix C: Steering group meeting notes
Earthquake resiliency steering group meeting July 29 2014 11:15am-12:45pm AM101

In attendance (order as introduced): Tim Archie, Johnny Flutey (ITS), Rhian Salmon (SCIE), Mairead de Roiste (SGEES), Peter Ritchie (BIO), David Harper (PSYCH), Beth Smith (ITS), Irina Elgort (CAD), Sarah Hoyte (CAD), Richard Arnold (MSTOR), Margaret Petty (DES)

Pre-meeting survey
Survey results identified the following challenges to creating resilient courses:

- Labs, tutorials, fieldwork
- Buy-in from lecturers for implementing resiliency options
- Access to digital resources
- Match between resiliency and pedagogy
- Communication with students
- Pastoral care

The survey responses identified several broad needs for making all types of courses resilient:

- Communication with all students- need for consistency across the university.
- Digital format of course materials and resources (software, library, etc.) with a cloud back-up.
- Remote access to course materials (students and faculty)

Survey respondents also identified options for making various types of courses resilient:

- Lectures
  - Alternative physical locations
  - Asynchronous- Record lectures using echo 360, podcasts of lectures
  - Synchronous- Scopia for videoconferencing, Blackboard Collaborate for webinars, google hangouts
  - Assessment- tests
- Tutorials
  - Alternative physical locations
  - Synchronous-Scopia for videoconferencing, Blackboard Collaborate for synchronous webinars
  - Asynchronous activities (wikis, blogs), google hangouts, skype.
- Labs/studio
  - Alternate physical locations
  - Recorded lab activities
  - Virtual labs- SimBio, EcoBeaker
  - Interactive remote teaching- skype, blackboard collaborate, etc.
- Fieldwork
  - Alternate locations
  - Alternate times

Key discussions

Assessments
In some subjects (such as mathematics and design), assessments are not easily carried out in an electronic format. The options discussed were:

- Virtually monitored, but not easy to implement.
- Test locations for distance education centres.
- Change the way assessment is done.
• Allow for flexibility in assessments — eg time and place determined by students
These do not account for ‘group marking’ as carried our by Design

Timing of recovery
• Need for consideration of short, medium, long term needs for resiliency which are dependent upon the scenarios (scale of damages).
• In the event of a major earthquake, students may leave. When (and how) should courses resume?
• Our timeframes for learning, assessment and student performance will need to take into account external stress factors (e.g. housing or transport problems, or coping with grief) and other personal circumstances. In particular, aftershocks will continue for months after the main seismic event and wear people down with stress and anxiety.

Communication
• Communication with students is essential, yet should this be done on a course to course basis, or at an institutional level.
• A university level app - to notify students.
• SMS notifications may be useful. Richard gave an example of cancelling tests due to bad weather.
• Access to student phone numbers and pictures of students are essential. Facebook - many courses use a facebook page, perhaps this is the most effective method to communicate with students? This, however, ‘forces’ students to have a Facebook profile, which could be sent to be unethical...
• Radio communication - but students do not necessarily have access radio (unless streamed)

Scenarios
• There was consensus that making resilience plans should consider a worst case scenario. However, resilience required to cope with lower levels of disruption should also be considered as they may be more likely and may not require the same levels of resources and effort to implement.
• A set of scenarios - scales of disruption and timeframes should be the same as used by Wellington council, and Victoria University of Wellington health and safety plans.
• Our planning should use the language and scenarios of other earthquake response plans.

Alternative locations
• Community based groups - libraries, schools, etc.
• Need for agreement with other universities/organizations for use of facilities

Resources for remote access
• Laptop, electronic resources - backpack of tools.
• Laptop option for faculty instead of standard desktop.
• Assess the resources of each academic.

Meeting outcomes and next steps
• Monthly one hour lunch meetings - tentatively scheduled for 11:30-12:30 on the last Tuesday of each month.
• Launch Earthquake resiliency Blackboard organization allowing for asynchronous collaboration among steering group members.
• Tim Archie and Sarah Hoyte to meet school representatives individually regarding implementation of resiliency options with a focus on technical help.
• Jonny Flutey to investigate the possibility of student photographs being attached to student records.
• Inclusion of the Victoria University of Wellington Health and safety office in steering group
• Access the decisions and policies made by Canterbury. What have they done and how can it be applied to VUW?
• Tim Rhian and Jonny meet to discuss possible workshops
• Tim (and Beth?) to visit Canterbury and meet with Wendy Lawson and her team
Earthquake resiliency steering group meeting August 19 2014 11:30am-12:30pm AM103

In attendance: Tim Archie, Johnny Flutey (ITS), Rhian Salmon (SCIE), Peter Ritchie (BIO), Beth Smith (ITS), Richard Arnold (MSTOR), Suzanne Boniface (PCS), Jeff Munn (Health and Safety), Jodye Tomalin (Greater Wellington Regional Council Office of Emergency Management), Craige Sinclair (Record Services).

A full recording of this meeting can be accessed by group members through the blackboard organisation.

Greater Wellington Regional Council Emergency Response Overview by Jodye Tomalin

- Strategy is to promote capacity and responsibility within individual communities
- Preparing communities for a lack of emergency response.
- Jodye informed us of student interest in disaster response
- Preparing individuals to lead a community response through a training programme. [http://www.getprepared.org.nz/CDEM-volunteer](http://www.getprepared.org.nz/CDEM-volunteer)
- Victoria University of Wellington staff are eligible to take this course and there is opportunity for Victoria University involvement in the upcoming Kelburn community resilience meetings.

Victoria University of Wellington Health and Safety committee- discussion led by Jeff Munn

- Each school has business continuity plan
- School plans are developed, but need more detail.
- School representatives on steering committee believed that business continuity plans are not readily known and have little detail and no specifics.
- Another key point made by steering group members was that academic staff had little knowledge about what to do in an emergency and what the university response would be- this highlighted a clear need for the Victoria University emergency management plan to be shared and presented at the next meeting.

Outcomes and next steps:

- Identified a need for student representation on steering group. Tim to contact VUWSA student well-being officer
- Need for information about Victoria University Emergency Management Plan. Jeff Munn to provide a copy and brief overview at next meeting.
- Need to plan a schedule of topics for upcoming monthly meetings- draft to be developed by Tim Archie and discussed and agreed upon at the September meeting.

Next meeting: 11:30 – 1pm, Sept 16, AM103

**11:30-12:00** presentation of Victoria University Emergency Response Plan provided by Health and Safety (15 – 20 mins) - draft of this plan to be shared with working group no less than a week in advance of the meeting. 10 minute discussion.

**12:00 – 12:20** Stuart Marshall, 20 minutes to present and discuss emergency response from the professional rescuer perspective.
12:20 – 1:00 Resilience programme planning - Tim will compile a provisional schedule of topics/programme for future meetings - agreement sought on the topics, speakers, and topic sequences. Includes brief overview of our “organisation” and modes for collaboration in Blackboard.
Meeting Notes September 16, 2014

Stuart Marshall- Victoria emergency response from professional rescuer perspective. Stu indicated that the rescue team is currently under review and its status is uncertain.

Tim Archie- Provide update on activities and describe the project going forward
  
  • Resiliency assessment  
    o Introduction of resiliency assessment  
  • Sign-up for resiliency support
  • Group discussion on topics for future meeting schedule  
    o Meeting formats- Presentation, discussion, recommendations.  
    o Identify coordinators and speakers for each meeting.  
    o Develop key discussions/questions for each meeting.  
    o Recommendations for each meeting.

Jeff Munn, Stephanie Cottrill- Victoria University Emergency Response Plan

Stephanie outlined the Victoria university emergency response plan- this presentation can be found in the Echo centre tab of the Blackboard Teaching Resilience in Science.

Outcomes
  
  • Agreed on meeting schedule, topics, format, and organizers.
  • Steering group academic members signed up for assistance from Sarah Hoyte and Tim Archie in implementing resiliency options in current and future courses.
October Resiliency Steering Group Meeting Notes

Date: October 21, 2014

Facilitator: Peter Ritchie

In Attendance: Peter Ritchie, Mairead De Roiste, Rhian Salmon, Irina Elgort, Jonny Flutey, Beth Smith, Craigie Sinclair, Paul Jose, Suzanne Boniface, Stuart Marshall, Maria Cobden, Kim Gray, Sarah Hoyte, Tim Archie

Tim Archie: Summary of communication in the University of Canterbury response and recovery.

Maria Cobden: University communication plans in the event of an earthquake or other disaster.

- Staff are asked not to contact students until given the okay - there is a need for consistent and clear information from one source.
- VUU homepage will be the primary source of information in the event of an disruption
- VUU has the ability to send out SMS messages to all students, but would be delayed and would crash network, thus VUU has been asked not to use this in an emergency.

12:00-12:15 Jonny Flutey: IT in support of communications - can we expect the VUU systems to perform similarly to that of UC?

- IT infrastructure is robust, but back-up systems require the use of diesel fuel.
- Blackboard is an essential program and is supported by the back-up system
- ITS is pursuing options to host Blackboard and email off site meaning these systems will be robust and will not be affected by a disruption such as an earthquake.
- However, faculty and students may not be able to access this resources if there is not internet and power. Jonny suggested that there wireless network USB be available to enable connectivity for staff and students.

12:15-1:00 Group discussion and development of recommendations about key aspects of communication that need to be considered at VUU at various levels (institutional, department, course-level).

Peter Ritchie facilitated a conversation about communication between faculty members in the recovery phase of a disruption. Peter provided an example of last year’s earthquake and a need for faculty waiting for instruction. There is a need for someone to identify the next steps. There is also a need have a core group of faculty that are knowledgeable in resiliency to communicate with all staff to coordinate recovery of teaching efforts. Our group is highly knowledgeable and would be effective in organising teaching recovering within respective departments.

Recommendations:

- ITS to ensure the availability of a large amount of wireless USBs. Need to be able to get a lot on short notice. Rationale: Internet connectivity is essential to all resiliency options, thus faculty and students will need access. Cabled networks will likely be damaged, but wireless networks should be operational relatively quickly (lifelines report).
• Development of a teaching recovery plan. This document would provide procedures and identify resources needed to restart teaching in a disrupted environment. Such a document could be individualized for specific departments and individual courses.

• Development of earthquake teaching recovery team in SEAD. Members of this group will assist their department in implementing resiliency options in the event of a disruption. They can advise staff on appropriate strategies and tools needed to resume teaching. Members of this group would also meet to discuss areas where they may help or get help from other departments. Rationale: This group would allow for quicker and more effective recovery. General staff would benefit from the expertise and would not have to do the leg work of figuring out which strategies and tools to use. The collective group will be able to communicate needs more quickly and orderly to ITS, library, administration. This group could be part existing committee such as the earthquake resiliency steering group or the existing teaching and learning committee.
December Teaching Resiliency Steering Group Meeting Notes

Date: December 19, 2014

Facilitator: Tim Archie

In Attendance: Mairead De Roiste, Beth Smith, Paul Jose, Richard Arnold, Stuart Marshall, Sarah Hoyte, Tim Archie

In this meeting we reviewed the preliminary recommendations and developed next steps for the project.

Review of Preliminary Recommendations:

- Include a statement of principles to justify the project focus including: the use of digital technologies, recommendations, limitations.
- Include a matrix or chart that shows levels of disruption, length of disruption, and resiliency options to describe the resiliency options in different scenarios.
- Language should be consistent with that used by facilities management and emergency management.
- Recommendations need an implementation strategy and plan-specifically for recommendations 1.1 and 1.2.
- Consolidation of recommendations 1.8 and 1.9. This will also aid in enabling 3.1.4. New recommendation will be drafted to reflect this.

Next Steps:

- Develop implementation plans for recommendation 1.2.
- Tim to meet with Heads of school within SEAD to identify critical courses and to get buy in and input for implementation strategy.
- Meet with ITS and CAD to discuss implementation of recommendation 1.1.
- Meet with sub-groups within the Teaching Resiliency working group to develop resiliency options for large classes, tutorials, labs, studios, and fieldwork courses.
Appendix D: Project summary presentation
Teaching Resiliency in SEAD: Recommendations and Implementation

Academic Resilience Steering Group
February 13, 2015

Steering group members

• Rhian Salmon- Science in Context
• Peter Ritchie- School of Biological Sciences
• Stuart Marshall- Engineering and Computer Sciences
• Maireed de Roiste- School of Geography, Environment, and Earth Sciences
• Suzanne Boniface- School of Chemical and Physical Sciences
• Richard Arnold- School of Mathematics, Statistics, and Operation Research
• Leon Gurevitch- School of Design
• Paul Jose- School of Psychology
• Irina Eigort- Centre for Academic Development
• Jonny Flutey- ITS
• Beth Smith- ITS
• Craigie Sinclair- Record Services
• Tim Archie- office of the PVC
Purpose and scope

• To develop recommendations for academic continuity within SEAD in the event of a disruption to teaching.
• Focus on recommendations that are effective and flexible to all scenarios (severity, timing, duration). Earthquakes and other natural disasters, man-made disasters, and pandemics.
• Focus on recommendations that improve everyday teaching and learning, efficiency, and retention.

Project activities

• Six 2.5 hour steering group meetings.
• Extensive literature review of institutional response to academic disruption.
  – University of Canterbury response and other institutions
• Site visit to University of Canterbury
• Review of 20+ “academic resiliency” plans from the U.S., Canada, and Australia.
• Pilot courses- implemented resiliency options in a selection of courses throughout SEAD.
Pilot courses

- STAT
- Computer science
- Design
- GEOG
- CHEM
- BIOL
- PSYC

Recommendation 1.1

Develop and implement course, school, and faculty level academic resilience plans
  - Identify and prioritize critical courses.
  - Course resiliency template.
  - Action items- develop capabilities and acquire resources. Focus on improving teaching, learning, and efficiency in non-disrupted scenarios.
  - Re-evaluate and update annually.
Recommendation 1.2

Employ a Resilience Coordinator and/or Instructional Designer
• Initiate faculty, school, and course level resilience plans.
• Assist schools in identifying critical courses.
• Collaborate with academic staff to develop course level resiliency plans.
• Implement and evaluate course level resiliency plans.
• Increase capacity of academic staff in the use of digital technologies.
• Enhance teaching and learning in non-disrupted environments.

Recommendation 1.3

Development of earthquake teaching recovery team within SEAD
• Composed of a pre-existing committee
• Share and develop expertise in flexible and resilient teaching strategies and tools.
• Efficiency in recovery: sharing of resources between schools, communication between academics, schools, and departments (FM, ITS, library).
• Maintain momentum and continuity and sustain interest
Recommendation 1.4

Academic resiliency website
• SEAD, VUW, ITS, or CAD.
• Resiliency assessment tool.
• Resiliency resources: communication procedures, resiliency options, tutorials.
• Workshop information
• Contact details for help with resilience planning and implementation.

Recommendations 1.5-4.6

• Over 35 additional recommendations
• Institution, department, school, and, course level
• Resources and technology
• Resiliency options (lecture, labs, tutorials, etc.)
• Communication
• Student capabilities
Final report

• Recommendations
• Implementation plan
• Resources: course level resiliency template, course level resiliency assessment, and website content.

Implementation plan

• Hire a resiliency coordinator (or assign duties to a current staff member).
• Organize the “teaching recovery team”
• Initiate resiliency planning
  – School level resiliency planning
  – Course level resiliency planning
  – Course level resiliency implementation
  – Support course level resiliency implementation
  – Evaluate and adapt
  – Report and update annually.
• Develop “Academic Resiliency” website
• Initiate resiliency planning in non-critical courses
Resources required

- Mobile technology for staff (laptops)
- Blackboard Collaborate
- Emergency packs (USB internet, contact lists, etc).
- Student contact information with photos
- Digitised content
- Emergency communication channels
- Resilient technology fund