



2015

Trimester 2

COURSE OUTLINE

SARC224

Fire Safety Design

GENERAL

Trimester 2; 15 points

ASSESSMENT

100% internal by assignment

CLASS TIMES AND LOCATIONS

LECTURES: Tuesday 11:30 – 12:20 Room: VS2.20

TUTORIALS: Wednesday 15:40 – 16:30 Room: VS2.20
Online TBC

COORDINATOR

Coordinator

Name: Geoff Thomas

Room: VS3.15

Phone: 6247 or 463 6247

Office Hours: TBC after discussion with class

Email: Geoff.thomas@vuw.ac.nz

Tutor details will be provided at start of the course.

COMMUNICATION OF ADDITIONAL INFORMATION

Any changes or additions to this Course Outline will be discussed and agreed with the class where practicable, and conveyed through Blackboard or via email to all students enrolled in the course. **Changes to submission dates for items of assessment cannot occur without permission from the Head of School.**

PRESCRIPTION

Basic principles of design to ensure the safety of people in buildings during a fire. The implications for building form, layout and interiors on escape route design, statutory requirements, and alternative solutions as means of compliance.

COURSE CONTENT

The course covers the following topics:

- Fire behaviour
- Fire spread within buildings
- Fire spread to other buildings
- Fire safety systems
- Egress
- Specific design
- Regulatory Environment

COURSE LEARNING OBJECTIVES

By the end of the course, students should have learned:

1. The background to Fire Safety Codes.
2. The basics of fire development and fire spread.
3. To use different methodologies and systems to provide an appropriate level of fire safety in buildings.
4. To conceptually design a multi-use building including fire safety requirements
5. To critically analyse prescriptive and performance based requirements for fire safety in buildings.
6. To produce a set of floor layouts, sections and elevations for a multi-use building incorporating fire safety features and egress planning along with other considerations.

GRADUATE SKILLS

<i>Graduate Skills</i>	<i>Taught</i>	<i>Practised</i>	<i>Assessed</i>
Knowledge			
• Information literacy		✓	
Creative and Critical Thinking			
• Problem solving	✓	✓	✓
• Critical evaluation	✓	✓	✓
• Work autonomously		✓	✓
• Creativity and innovation		✓	
Communication			
• Effective communication (written)		✓	✓
• Effective communication (oral)		✓	
• Effective communication (graphic)		✓	✓
• Work effectively in a team setting	✓	✓	✓
Leadership			
• Ethical behaviour in social / professional / work environments	✓	✓	✓
• Responsible, effective citizenship	✓	✓	
• Commitment to responsibilities under the Treaty of Waitangi	✓	✓	

TEACHING FORMAT

This is a lecture-based course with tutorials and on-line readings in Blackboard. Exercises include site visits, laboratory tests and standard classroom exercises, which supplement the lectures.

All Course materials and announcements are provided on Blackboard, in lectures, and because of the significant number of demonstrations and use of visual images, students are expected to attend all lectures. Attendance at exercises is not monitored, but because knowledge of exercises is tested students, should attend them all.

There is no group work in this course.

<https://intranet.victoria.ac.nz/academic/staff-resources/assessment.aspx>

MANDATORY COURSE REQUIREMENTS

MCRs are requirements, in addition to achieving a pass grade, that students must meet in order to pass a course.

The mandatory course requirements for this course are below:

1. Achieve a total grade equivalent to 30% or higher in each type of assessment to demonstrate the achievement of all the CLO's of the course.

Any student who is concerned that they have been (or might be) unable to meet any of the MCRs because of exceptional personal circumstances, should contact the course coordinator as soon as possible.

WORKLOAD

Attendance and participation is an important aspect of the learning process, and you are expected to attend all the lectures and tutorials.

If extraordinary circumstances arise that require you to be absent from some class sessions, you should discuss the situation with the Course Coordinator as soon as possible.

You should expect to spend around 150 hours on this course, including both scheduled class time and independent study. Typically this involves around 120 hours per week during the 12 teaching weeks, with the balance during the mid-trimester break, study week and examination period.

Students with course timetable clashes are responsible for discussing these with their Course Coordinators. Students who then choose to remain enrolled in such courses must recognise that it is their sole responsibility to seek information from peers, Blackboard and other sources, and catch up on course material they may miss because of clashes.

ASSESSMENT

To provide a comprehensive overview, a detailed description of the three types of assessment used follows:

1. Tutorials (20 marks):

There are a series of six tutorial exercises for which you must hand in your answers before the tutorial. No late hand-ins will be accepted.

Submission Requirements:

Submit on day of tutorial

Assessment Criteria:

		CLO(s)
Reasonable attempt submitted on time	(60%).	1,2,3,4

Quality of attempt submitted	(40%)	1,2,3,4,5
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2. On-Line tests (20 marks):

There will be four online tests. These will be made available on every third week and you will have until three days to complete them. These will be open book but are time limited and must be completed once they are started. If you have any problems with the tests as you are completing them please contact the course instructor.

Submission Requirements:

- Complete test when it is available.

Assessment Criteria:

	CLO(s)
Correctly answer questions	1, 2, 3, 4, 5

3. Project (60 marks):

There are two options for this project

Option 1

Design of large multiple use building to Acceptable Solutions. This design involves planning three typical floors (30 marks), with different use as an individual hand-in and coordinating the overall building planning (15 marks). The preliminary hand-in is worth 15 marks.

Option 2

Assessing three existing buildings from different risk groups for their compliance and assessing potential upgrades (15% each building). The preliminary hand-in is worth 15 marks.

Hand-in dates are given in the course schedule.

Submission Requirements:

- Interim hand-in, sketch plans & Fire safety systems for comment
- Annotated floor plan showing fire safety features including egress.
- Summary of Fire Safety Requirements from C/AS1-7
- Sections and elevations showing fire safety features including egress.
- Summary of overall Building Fire Safety Requirements from C/AS1-7
- Proposed upgrades (for option 2)

• **Assessment Criteria:**

		CLO(s)
Interim hand-in for review	(15 marks)	1, 2, 3, 4, 5, 6
Quality and correctness of drawings and summary	(30 marks)	1, 2, 3, 4, 5, 6
Integration between typical floors/Upgrades	(15 marks)	1, 2, 3, 4, 5, 6

All work submitted for this course must be original and developed for this course only, unless prior approval is gained from the course coordinator to further develop existing work from previous or concurrent courses.

The course is internally assessed by assignment work in the form of 3 projects. Assignments are assessed and graded A+, A, A-, B+, B, B-, C+, C, C-, D, E, (where C- is a PASS). Grades only are issued to students. The final grade for the course is based on the aggregation of the percentage marks for each of the assignments, and a final grade of C- or better is required to pass the course.

NOTE: In order to ensure equity, hand-in dates cannot be modified. A hand-in date cannot be changed without permission from the Head of School.

To provide a comprehensive overview, a detailed description of the assignments which contribute towards the final course grade follows:

The projects contribute towards the final course grade as follows:

Tutorials:	(6 Weeks: due (see schedule))	20%
On-Line Tests:	(4 Weeks: due (see schedule))	20%
Project	(9 Weeks: due (see schedule))	60%
Total		100%

All work submitted for assessment must be accompanied by an ASSESSMENT DECLARATION FORM.

All grades posted during this course are only provisional results until confirmed by the School Examiners Committee which meets after the examination period.

All grades posted during this course are only provisional results until entered on your student record in Banner.

SUBMISSION AND RETURN OF WORK

Hard copies of assessments will be handed in at class time. Tests will be graded automatically and a mark returned as soon as it is completed.

All work submitted for assessment must be accompanied by an ASSESSMENT DECLARATION FORM.

You are responsible for ensuring your work is submitted on time and in the required format.

Except for work submitted after the deadline, all hand-ins must be submitted to the Hand-in folder on the R-Drive. This is a School of Architecture requirement to ensure that student work is appropriately archived.

Work submitted late must be submitted to the Course Coordinator.

Late submissions will be penalised as set out below, unless an extension is approved by the Course Coordinator.

EXTENSIONS

In the event of illness or other extraordinary circumstances that prevent you from submitting and/or presenting a piece of work on time, or that you feel adversely affect the quality of the work you submit, it is important that you discuss your circumstances with the Course Coordinator as soon as possible so that appropriate arrangements may be made. If possible, you should complete an Application for Extension form (available from the Faculty Office) for the Course Coordinator to approve before the hand-in date. You must provide suitable evidence of your illness or other circumstances. In an emergency, or if you are unable to contact the Course Coordinator, you should advise the Faculty Office of your situation.

PENALTIES

For work that arrives late without an approved extension, the following penalty will be applied: 5% immediately, then 5% for every subsequent 24 hours including weekends.

REQUIRED MATERIALS AND EQUIPMENT

Students will need to provide all materials and equipment as necessary for the completion of required work. Please check the website link below for general requirements:

Students are required to have a scientific calculator.
A scale ruler with 1:20, 1:50, 1:100 and 1:200 scales is required for measuring off plans.

SET TEXTS

There is one prescribed text that will be made available as a pdf on Blackboard.

Fire Engineering Design Guide 3rd Ed., 2008.

We will also be referring to the Fire Safety Compliance Documents, both the 2012 and to a lesser extent previous versions which can be downloaded from <http://www.dbh.govt.nz/compliance-documents#C>

SCHEDULE OF SESSIONS

Variations may be made to allow for availability of field trip sites and external lecturers.

Week	Day	Date	Item	Location	Time	Comments
Month						
Week 29 July	M	13	Building Codes	VS2.20	15:40	Trimester 2 begins
	TU	14				
	W	15	Tut. Bldg Codes and Fire Safety Systems	VS2.20	15:40	Tutorial (3.3%)
	TH	16				
	F	17				
Week 30 July	M	20	Risk and Fire Safety Precautions (Systems)	VS2.20	15:40	
	TU	21	BRANZ Visit (TBC)		TBC	
	W	22	No class			
	TH	23				
	F	24	Withdrawal refund			<i>This is the last date that you can withdraw from a Tri 2 course with a full fees refund</i>
Week 31 July	M	27	Fire growth, flashover	VS2.20	15:40	Assignment prelim hand-in (15%)
	TU	28				
	W	29	Tut. Fire development	VS2.20	15:40	Tutorial (3.3%)
	TH	30				
	F	31				Test 1 available
Week 32 August	M	3	Fire Severity and Fire Resistance Ratings	VS2.20	15:40	Test 1 due (5%)
	TU	4				
	W	5	Tut. Time Equivalence and datasheets	VS2.20	15:40	Tutorial (3.3%)
	TH	6				
	F	7				
Week 33 August	M	10	Detectors/Sprinklers	VS2.20	15:40	
	TU	11				
	W	12	Pertronics guest lecture TBC	VS2.20	15:40	Project prelim hand-in 15%

	TH	13				
	F	14				Test 2 available
Week 34 August	M	17	Fire Spread	VS2.20	15:40	Test 2 due (5%)
	TU	18				
	W	19	Tutorial C/AS Fire spread and spreadsheet	VS2.20	15:40	Tutorial (3.3%)
	TH	20				
	F	21				
Week 35 August	M	24				Mid-trimester break
	TU	25				
	W	26				
	TH	27				
	F	28				
Week 36 August/September	M	31				
	TU	1				
	W	2				
	TH	3				
	F	4				Mid-trimester break ends
Week 37 September	M	7	Human Behaviour in Fires and Occupant Response to Fires	VS2.20	15:40	
	TU	8				
	W	9	NZFS visit? tbc		15:40	
	TH	10				
	F	11				
Week 38 September	M	14	Egress design & planning	VS2.20	15:40	
	TU	15				
	W	16	NZFS Evac regs guest lecture	VS2.20	15:40	
	TH	17				
	F	18				
Week 39 September	M	21	Smoke & Smoke management	VS2.20	15:40	
	TU	22				
	W	23	Tut. Smoke filling, spreadsheet and BRANZFire	VS2.20	15:40	Tutorial (3.3%)
	TH	24				
	F	25	Course withdrawals			Test 3 Available After this date the Associate Dean's approval is required for withdrawals from Tri 2 courses.
Week 40 September /October	M	28	Verification Method, C/VM2	VS2.20	15:40	Test 3 due (5%)
	TU	29				
	W	30	Egress Factor of Safety analysis (RSET/ASET)	VS2.20	15:40	Tutorial (3.3%)
	TH	1				
	F	2				

Week 41 October	M	5	Assignment Q & A	VS2.20	15:40	
	TU	6				
	W	7	Green Buildings and Fire Safety	VS2.20	15:40	Project final Due (45%)
	TH	8				
	F	9				Test 4 available
Week 42 October	M	12	Future developments	VS2.20	15:40	
	TU	13				Test 4 due (5%)
	W	14	No class	VS2.20	15:40	
	TH	15				
	F	16				
Week 43 October	M	19				Study/Examination Period
	TU	20				
	W	21				
	TH	22				
	F	23				Examination Period begins
Week 44 October	M	26				Labour Day – Public Holiday
	TU	27				
	W	28				
	TH	29				
	F	30				
Week 45 November	M	2				
	TU	3				
	W	4				
	TH	5				
	F	6				
Week 46 November	M	9				
	TU	10				
	W	11				
	TH	12				
	F	13				
	S	14				Examination Period ends

CLASS REPRESENTATIVES

The Faculty of Architecture and Design operates a system of Class Representatives in 100-level courses, and Year Representatives in each of the professional disciplines. Student Representatives are elected during a class session in the first week of teaching. All Student Representatives will be listed on the STUDiO notice board in the Atrium, and the relevant Representatives are also listed on studio notice boards. Student Representatives have a role in liaising between staff and students to represent the interests of students to the academic staff, and also in providing students with a communication channel to STUDiO and the Student Representation organiser.

Class Rep name and contact details:

STUDENT FEEDBACK

The Course Coordinator will discuss feedback from previous students at an appropriate time during the course.

Student feedback on University courses may be found at www.cad.vuw.ac.nz/feedback/feedback_display.php.

OTHER IMPORTANT INFORMATION

The information above is specific to this course. There is other important information that students must familiarise themselves with, including:

- Academic Integrity and Plagiarism: www.victoria.ac.nz/home/study/plagiarism
- Aegrotats: www.victoria.ac.nz/about/governance/dvc-academic/documents/aegrotat.pdf
- Academic Progress: www.victoria.ac.nz/home/study/academic-progress (including restrictions and non-engagement)
- Dates and deadlines: www.victoria.ac.nz/home/study/dates
- Faculty Current Students site: www.victoria.ac.nz/fad/faculty-administration/current-students
- Grades: <http://www.victoria.ac.nz/students/study/progress/grades>
- Resolving academic issues: www.victoria.ac.nz/about/governance/dvc-academic/documents/grievances.pdf
- Special passes: <http://www.victoria.ac.nz/about/governance/dvc-academic/documents/special-pass-application-form.pdf>
- Statutes and policies including the Student Conduct Statute: www.victoria.ac.nz/home/about/policy
- Student support: www.victoria.ac.nz/home/viclife/student-service
- Students with disabilities: www.victoria.ac.nz/st_services/disability
- Student Charter: www.victoria.ac.nz/home/viclife/student-charter
- Student Contract: www.victoria.ac.nz/home/admisenrol/enrol/studentcontract
- Turnitin: www.cad.vuw.ac.nz/wiki/index.php/Turnitin
- University structure: www.victoria.ac.nz/home/about
- VUWSA: www.vuwsa.org.nz



FACULTY OF ARCHITECTURE & DESIGN
Te Wahanga Waihanga-Hoahoa

Work Submitted for Assessment

Declaration Form

Student's full name :

Course :

Assignment/project :
(number and title)

Date submitted :

Refer to the information on Academic Integrity, Plagiarism and Copyright on the back of this form.

I confirm that:

I have read and understood the University's information on academic integrity and plagiarism contained at [http: www.victoria.ac.nz/home/study/plagiarism](http://www.victoria.ac.nz/home/study/plagiarism) and outlined below:

- I have read and understood the general principles of copyright law as set out below:
- This project/assignment is entirely the result of my own work except where clearly acknowledged otherwise:
- Any use of material created by someone else is permitted by the copyright owner.

Signed:

Date:

Academic Integrity, Plagiarism and Copyright

ACADEMIC INTEGRITY

Academic integrity is important because it is the core value on which the University's learning, teaching and research activities are based. University staff and students are expected to treat academic, intellectual or creative work that has been done by other people with respect at all times. Victoria University's reputation for academic integrity adds value to your qualification.

Academic integrity is simply about being honest when you submit your academic work for assessment

- You must acknowledge any ideas and assistance you have had from other people.
- You must fully reference the source of those ideas and assistance.
- You must make clear which parts of the work you are submitting are based on other people's work.
- You must not lie about whose ideas you are submitting.
- When using work created by others either as a basis for your own work, or as an element within your own work, you must comply with copyright law

Summarised from information on the University's Integrity and Plagiarism website:

www.victoria.ac.nz/home/study/plagiarism

PLAGIARISM

The University defines plagiarism as presenting someone else's work as if it were your own, whether you mean to or not. 'Someone else's work' means anything that is not your own idea. Even if it is presented in your own style, you must acknowledge your sources fully and appropriately. This includes:

- Material from books, journals or any other printed source
- The work of other students or staff
- Information from the internet
- Software programs and other electronic material
- Designs and ideas
- The organisation or structuring of any such material

Find out more about plagiarism, how to avoid it and penalties, on the University's website:

www.victoria.ac.nz/home/study/plagiarism

COPYRIGHT

Copyright law regulates the use of the work of an author, artist, designer or other creator.

- Copyright applies to created work including designs, music, computer programs, artistic and literary work.
- The work can be in printed, digital, audio, video or other formats.
- Normally the author or creator of a work owns the copyright for their lifetime and for 50 years after their death, (although sometimes someone other than the creator of a work owns the copyright to the work, such as the creator's employer, or a person who commissions the creator's work).
- You must have permission from the copyright owner to copy, alter, display, distribute or otherwise use created work.
- If the creator has applied a Creative Commons licence to a work, this permits others to use the work but only in accordance with that licence.

Further information on copyright is available on the Victoria University website:

<http://library.victoria.ac.nz/library/about/policies/copyright.html>