



University of South Australia

If you are required to use a calculator, please note the make and model here:

Calculator Make:

Calculator Model:

2006 Mid Year Examination

Student ID Number

Student ID Number																				
-------------------	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

Family Name	
Given Names	

Division of ITEE

School of NBE

Course Name Construction & Fire Engineering 1N

Subject Area CIVE

Catalogue Number 4009

Examination Day Monday

Examination Date 26 June 2006

Examination Time 14.00hrs

Length of Exam 3 Hours

Examination Venue: Ridley Centre

Instructions to Candidates

- The value of each part is noted adjacent to that part
- Open Book Examination i.e. all references permitted
- This examination is in 2 parts i.e. Part A and Part B.
- Part A deals with Construction
- Part B deals with Fire.
- You must answer the 2 parts in separate booklets, one for Part A and one for Part B.

Conduct in examinations

- Students are responsible for finding out their examination times and locations and for travelling to the venue. Examination times and locations are published on the University web site and advertised on the student portal. It is recommended that students arrive at least 15 minutes prior to the advertised start time.
- Students who arrive up to 30 minutes after the published start time will be permitted to enter the examination room but will not be allowed any additional time to complete the examination.
- Students who arrive more than 30 minutes after the published start time will not be permitted to enter the examination room and will receive a zero mark for that assessment.
- All students must bring with them, and display on their desk:
 - their student identification card: or
 - an alternative form of photographic identification such as a passport or driver's license. If a student does not provide acceptable photographic identification the invigilator will compare the student's likeness with University records in order to verify the student's identity;
- Where applicable, students must also display on their desk:
 - an approved disability access plan; and/or
 - an ENTEXT Card (for students who are entitled to extra time but have not been issued with an indicator on their student identification card)
- Unless otherwise specified in the course information booklet or as an agreed provision under Section 3: Moderation and Variation, a student must not take into the examination room any item with the potential to provide them or another student with an advantage, including but not limited to:
 - text books or any other book including dictionaries
 - calculators
 - mobile telephones, personal digital assistants, messaging devices or any other electronic device
 - notes, or other written documents
 - devices or personal items
 - examination answer booklets, attendance slips or scrap paper
- Any items specified as being allowed in the course information booklet must not be enhanced or tampered with in any way that provides an additional advantage to the student or any other student.

Procedures during the examination

- Every student must complete the attendance slip provided.
- The examination starting time may include a designated reading time for students. During this reading time, students are not permitted to write in the examination booklets but may complete attendance slips, fill in details required on the front cover of examination booklets, and make notes on loose-leaf paper provided. An invigilator will announce when the reading time has elapsed, after which students may write in the examination booklet.
- No student will commence writing answers until authorised by an invigilator. All students must stop writing when instructed by an invigilator. At the end of the examination all students must remain seated until all examination booklets have been collected.
- During an examination students are not permitted to speak to or communicate with any other student, or give or receive any form of assistance, academic or otherwise.

Procedures for leaving the examination room

- Students are not permitted to leave the examination room in the first 30 minutes after the published starting time or during the last 10 minutes of any examination.
- After the first 30 minutes of the examination has lapsed, a student can request to leave the examination room for a short break. When approval is given by an invigilator, the student will be supervised during the period of absence.
- Students wishing to permanently leave the examination room must hand all examination booklets to the invigilator who will endorse the booklets as correctly identifying the student. Students cannot remove any examination answer booklets, scrap paper or attendance slips from the examination room.

Breaches of examination procedures

- A breach of the examination procedures may constitute academic misconduct. Procedures are deemed to be breached even if it cannot be demonstrated that the student gained an advantage from the breach. For example, if a student takes a mobile telephone or device into the examination room but does not switch it on or remove it from their pocket, it may still constitute academic misconduct although the intent is recognised in determining an appropriate outcome.
- Breaches of the examination procedures will be recorded under Section 9: Academic Integrity of this manual whether they constitute academic misconduct or not.

Procedures for breaches that cause disruption to an examination

- Any student disrupting the examination can be instantly dismissed from the examination room at the discretion of the chief invigilator. Where dismissal is the appropriate course of action, the chief invigilator will document the incident and provide a report to the Head of School or Director: Regional Engagement or nominee.
- The Head of School or Director: Regional Engagement or nominee will investigate the incident as either:
 - academic misconduct by following the procedures for formal inquiry set out in Section 9: Academic Integrity, or
 - misconduct under Statute 7: Student Misconduct.
- Where dismissal is not deemed appropriate by the chief invigilator, the student will be permitted to remain in the examination, and clause 6.6 will apply.

Procedures for breaches that do not cause disruption to an examination

- If a breach is detected that does not cause disruption to the examination, or is assessed by the chief invigilator as not warranting dismissal from the examination room, the invigilator will tell the student that the breach has been detected and will be reported.

**UNIVERSITY OF SOUTH AUSTRALIA
SCHOOL OF NATURAL & BUILT ENVIRONMENTS**

PROGRAM: **Bachelor of Construction Management & Economics (Hons)**

COURSE: **Construction & Fire Engineering 1N** (Construction part of CIVE 4009)

EXAMINATION: Study Period 2, 2006

DURATION: **3Hours** of Exam time preceded by 10 minutes of Reading time, a total of **3Hrs 10 Mins**.

For **ENTEXT** students 10 minutes of Reading time plus 3Hrs & 30Mins of Exam Time ie a total of **3Hrs 40Mins**

Those students undertaking **only** Part A will have 2 hours to complete the Examination.

Those students undertaking **only** Part B will have 1 hour to complete the Examination.

EXAMINER: Assoc Prof George Zillante (**Tel (08) 8302 2379**)

REVIEWER: Jeremy Coggins

INSTRUCTIONS TO CANDIDATES:

- The value of each part is noted adjacent to that part
- Open Book Examination ie all references permitted
- This examination is in 2 parts i.e. Part A and Part B.
- Part A deals with Construction
- Part B deals with Fire.
- You must answer the 2 parts in separate booklets, one for Part A and one for Part B.

NOTES FROM EXAMINER: Nil

Part A CONSTRUCTION COMPONENT (100 Marks)

BACKGROUND INFORMATION

A Developer is proposing to construct a 30-storey building on top of Mount Lofty in the Adelaide Hills some 12kms from the centre of Adelaide. The building is intended to be a “landmark” building and take advantage of the spectacular views of the City and the Hills and to provide a mix of uses viz:

- car parking for 2 storeys underground,
- shopping from the ground to the 5th floor,
- offices from the 6th to the 10th floor,
- residential apartments from the 11th to the 25th floor and
- penthouse suites from the 26th to the 30th floor.

Question

(100 Marks)

You have been approached to tender for the project and, as part of the tender, you are required to submit a report that addresses the following issues:

- What cladding system you would use and why? **(15 Marks)**
- What cladding material you would use and why? **(15 Marks)**
- What type of roofing system and material you would use and why? **(15 Marks)**
- What type of stormwater disposal system you would use and why? **(15 Marks)**
- What Intelligent Technologies you would use in the building and why? **(15 Marks)**
- What Constructability issues you would address and why? **(25 Marks)**

Prepare a report which addresses the six points listed above.

Total Marks available for Part A

100 Marks

Part B Fire Component

(50 Marks)

Answer any 2 of the following 3 questions

Question 1

(25 Marks)

A property developer wants to build a tall building but has been told by someone in the fire brigade that she can't have a bare steel building frame, an open stair, open floor penetrations or full height glazing to the external walls.

(a) Discuss, using diagrams where appropriate, the different ways that fire and smoke can spread from one floor to another. **(13 marks)**

(b) How should she construct an unsprinklered multistorey building to resist this fire spread? List the building elements she should use and discuss how these would make the building more fire safe. **(12 Marks)**

Question 2

(25 Marks)

A building owner complains that he is required to install fire sprinklers in a building. He maintains that this is ridiculous because he knows that if a fire starts it will likely go out all by itself.

(a) Discuss whether you agree or disagree and what advice you would give him about the different phases of fire growth within a building. **(13 Marks)**

(b) Discuss the potentially dangerous event which can occur if flashover fails to eventuate.

Ensure that your discussion includes the name of the event, the cause and fire triangle and flammable. **(12 Marks)**

Question 3

(25 Marks)

An architect telephones you and complains that for a new warehouse he is designing he has been asked to install a 4-hour firewall by someone in the building control section of the Local Council. The last block of home units he built had much less fire resistance.

(a) Discuss why different occupancy classifications require building elements to have different Fire Resistance Levels. **(13 Marks)**

(b) Discuss the difference between a fire in a home unit and a fire in warehouse and why the Architect can't allow materials to be stacked over a certain height in the proposed building. **(12 Marks)**

Total Marks available for Part B

50 Marks