



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

Family Name	
Given Names	

Division of Information Technology, Engineering & the Environment

School of Natural & Built Environments

Course Name: Construction 2N

Subject Area: CIVE

Catalogue Number: 2002

Examination Day: Wednesday

Examination Date: 21 June 2006

Examination Time: 9.00am

Length of Exam: 2 hours (+ 10 minutes reading time)

Note: Entext students get an extra 20 minutes

Examination Venue: Ridley Centre

Instructions to Candidates

INSTRUCTIONS TO CANDIDATES:

- Attempt four (4) questions only
- All questions are of equal value
- State any assumptions made
- No reference materials are allowed
- Calculators allowed
- This exam is worth 50% of the total course marks

EXAMINER: Sam Baroudi (Tel. 8302 2234)

EXAM REVIEWED BY: Stefan Hornlund

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.
- The invigilator will document the incident and will provide a copy of this report to the Academic Integrity Officer at the relevant school within 5 working days of the incident.
- If the Academic Integrity Officer considers that the breach constitutes academic misconduct, they will investigate the incident by following the procedures for managing alleged academic misconduct set out in Section 9: Academic Integrity.
- If the Academic Integrity Officer considers that the breach does not constitute academic misconduct, they will provide academic counselling to the student.

Question 1**(25 Marks)**

You are negotiating with a client to design and construct their new office/warehouse. Your client is Global Storage Pty. Ltd and their core business is the storage of imported goods that are awaiting distribution. They require 3,000 sq.m. of low cost warehouse space. They have requested large open floor areas and a 6 metre floor to roof clearance. Advise the client in respect to what type of building construction you would recommend and the reasons why. The client has also expressed the need to ensure that costs are kept to a minimum hence they have stipulated the use of metal claddings. Ensure you make reference to the following aspects in your discussions: framing, cladding, roofing, flooring, building access and lighting issues. Provide any drawing(s) that you feel may assist in your discussion.

Question 2**(25Marks)**

The client mentioned in Question 1 has now decided that they may in fact consider Tilt-up wall construction as an option on their warehouse project. They have requested that you report back to them on this type of construction. Their main areas of interest involve the following points so your report should make significant reference to them.

- a. Explain all the processes involved in its construction.
- b. Briefly describe any similar forms of construction available to the client.
- c. Would you recommend the use of Tilt-up walling and why?

Question 3**(25 Marks)**

A new 20 storey building is being built in the Adelaide CBD. Its construction is fairly typical of many in situ concrete framed buildings that have been built in recent years, ie. a frame with a non load bearing cladding system attached. It is rectangular in shape measuring 30 metres by 15 metres. Discuss issues that may be relevant to this building focusing on the following aspects.

- a. The possible layout of beams and columns. Discuss and provide a drawing.
- b. The use of temporary formwork to integrate floors into the frame construction.
- c. Advantages of using high strength concrete in this structure.
- d. Suggest an appropriate cladding system and describe it.

Question 4**(25 Marks)**

The provision of building cores within multistorey buildings is fundamental to their functionality. Without them these types of buildings could not be serviced appropriately. Discuss what you understand about building cores using the following as a guide.

- a. Elaborate on the types of facilities that building cores house.
- b. Describe how building cores are typically constructed.
- c. How can building cores be of structural assistance in multi-storey buildings?
- d. Is the building core's construction important to the time schedule and why?

Question 5**(25 Marks)**

Answer only four (4) of the following questions in respect to industrial/commercial buildings. Clearly indicate which questions are being answered.

- a. Discuss what you understand about “waffle slabs” in relation to suspended floors. Can you suggest buildings that could possibly benefit from their use and why?
- b. What are preliminary items on building projects? Give 3 examples and explain what purpose they each serve.
- c. What do you understand about engineered timber products? Provide examples of some types with relevant descriptions.
- d. What aspects should be considered when choosing a roofing system to suit the needs of a multistorey building?
- e. Describe the construction of concealed grid ceiling systems. What would you comment in respect to accessibility to services with this type of ceiling?
- f. Discuss the construction of reinforced masonry and elaborate on its benefits in general building works. Give examples of its use.

END OF QUESTIONS