

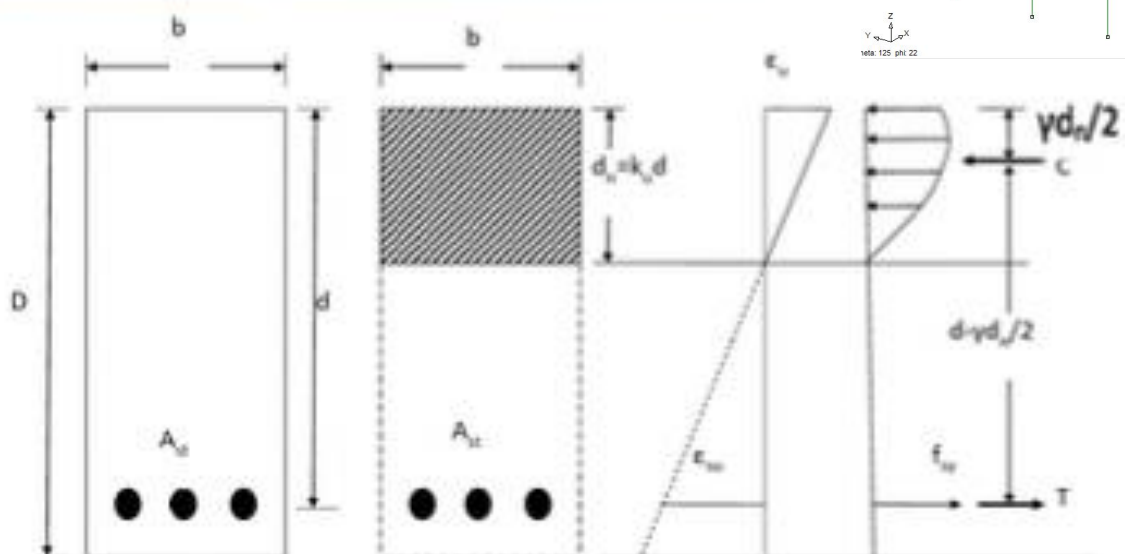
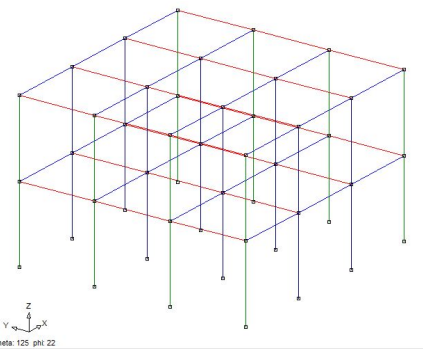
Concrete Lec Sum

LECTURE 1 – DESIGN OF REINFORCED CONCRETE BEAMS IN FLEXURE

- As load increases, the moment (M) increases to levels where the linear elastic behaviour is no longer valid
- This occurs when concrete stress in compression exceeds 40% of the characteristic compressive strength (f_c')
- Relationship between the concrete stress and concrete strain follows that of the stress-strain curve of concrete

Beams do not usually have horizontal (axial) forces applied on them, just bending and shear forces

Stress and strain distribution when M_u is reached



3 Teaching and Learning Activities

Weeks	Topic	Lecture	Tutorial	Independent	Assessments Due
Week 1 05-03-2018	Design of Reinforced Concrete Beams in Flexure	Lecture 1: Design of Reinforced Concrete Beams in Flexure	Tutorial 1: Design of Reinforced Concrete Beams in Flexure	Students are expected to be enrolled in this unit and its tutorial. Students are expected to read Lecture note 1 in vUWS, try Tutorial 1 and form team of 4 or 5 for the Major Design Assignment.	
Week 2 12-03-2018	Doubly Reinforced Beams and Major Design Assignment Brief	Lecture 2: Doubly Reinforced Beams and Major Design Assignment Brief	Tutorial 2: Doubly Reinforced Beams	Students are expected to read Lecture note 2 in vUWS, try Tutorial 2 and bring along a copy of AS3600:2009 (Page 105-109) to your tutorial class.	
Week 3 19-03-2018	Shear Design for Beams	Lecture 3: Shear Design for Beams	Tutorial 3: Shear Design for Beams	Students are expected to read Lecture note 3 in vUWS and try Tutorial 3.	
Week 4 26-03-2018	Deection of Beams	Lecture 4: Deection of Beams	Tutorial 4: Deection of Beams	Students are expected to read Lecture note 4 in vUWS, try Tutorial 4 and bring along a copy of AS3600:2009 (Page 33-34) and (113-116) and AS/NZS1170.0:2002 (Page 15-17) to your tutorial class.	
Week 5 02-04-2018	Reinforcement Fabrication and Detailing	Guest lecture: Dr Eric Lume, National Engineer of Steel Reinforcement Institute of Australia	No Tutorial	Students are expected to read Lecture note 4 in vUWS, try Tutorial 4 and bring along a copy of AS3600:2009 (Page 33-34) and (113-116) and AS/NZS1170.0:2002 (Page 15-17) to your tutorial class. Students are expected to attend the guest lecture which helps out with their Major Design Assignment.	- Mid Semester test
Week 6 09-04-2018	Reinforced Concrete Columns	Lecture 5: Reinforced Concrete Columns	Tutorial 5: Reinforced Concrete Columns	Students are expected to read Lecture note 5 in vUWS and try Tutorial 5.	- Major Design Assignment
Week 7 16-04-2018	Design for One-Way Slab	Lecture 6: Design for One-Way Slab	Tutorial 6: Design for One-Way Slab	Students are expected to read Lecture note 6 in vUWS and try Tutorial 6.	
Week 8 23-04-2018	Feedback Session for Mid-Session Examination	No Lecture (Public Holiday)	No Tutorial (Public Holiday)	Students are given a Feedback Session for Mid-Session Examination on Wednesday this week.	

Week 9 30-04-2018	Intra Session Break				
Week 10 07-05-2018	Design for Two-Way Slab	Lecture 7: Design for Two-Way Slab	Tutorial 7: Design for Two-Way Slab	Students are expected to read Lecture note 7 in vUWS and try Tutorial 7.	
Week 11 14-05-2018	Introduction to Prestressed Concrete	Lecture 8: Introduction to Prestressed Concrete	Tutorial 8: Introduction to Prestressed Concrete	Students are expected to read Lecture note 8 in vUWS and try Tutorial 8.	
Week 12 21-05-2018	Serviceability in Prestressed Concrete	Lecture 9: Serviceability in Prestressed Concrete	Tutorial 9: Serviceability in Prestressed Concrete	Students are expected to read Lecture note 9 in vUWS and try Tutorial 9.	
Week 13 28-05-2018	Flexural Design for Prestressed Concrete	Lecture 10: Flexural Design for Prestressed Concrete	Tutorial 10: Flexural Design for Prestressed Concrete	Students are expected to read Lecture note 10 in vUWS and try Tutorial 10.	- Major Design Assignment
Week 14 04-06-2018	Professionals Australia	Guest lecture: Presentation from Professionals Australia (Current Employment Opportunity and Job Search)	No Tutorial	Students are expected to attend the guest lecture.	
Week 15 11-06-2018	Stuvac				
Week 16 18-06-2018	Formal Examination Period				- Final Exam
Week 17 25-12-2017	Formal Examination Period				- Final Exam

The above timetable should be used as a guide only, as it is subject to change. Students will be advised of any changes as they become known.