

STEEL & TIMBER DESIGN

BAA 3223

COURSE INFORMATION

by

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COURSE SYNOPSIS

This course covers the analysis and design steel structures to EC3 for beams, column, connections, trusses, compression members and tension members. This course is also covered an introduction to Timber design to MS544.

COURSE OUTCOMES

At the end of this course, the students are expected to fulfil the following course outcomes:

- CO1: Identify **steel section classification** according to the relevant codes of practice in building design.
- CO2: Analyse & design steel **beam** and **column** according to the relevant codes of practice in building design.
- CO3: Analyse & design steel **trusses** and **connection** in according to the relevant codes of practice in building design.
- CO4: Analyse & design a typical **timber structure** according to the relevant codes of practice in building design.
- CO5: Communicate effectively within a team designing a multi-storey building project by writing and **producing a report** according to given time.
- CO6: Effectively producing report by using appropriate design **software** according to a given time.

TOPICS

- 1. Introduction to Structural Steel Design & Steel Eurocodes**
- 2. Classification of Cross Section**
- 3. Beam Design**
- 4. Column Design**
- 5. Trusses Design**
- 6. Connection Design**
- 7. Timber Design**
- 8. Design Project**

ASSESSMENT PLAN

Distribution (%)			CO1	CO2	CO3	CO4	CO5	CO6
Quizzes	1	5%	5%					
	2	5%			5%			
Assignment		10%			10%			
Mid Term		20%		20%				
Design Project		20%		5.0%	5.0%		7.0%	3%
Final Examination		40%		16%	16%	8%		
TOTAL		100%	5.0%	41.0%	36.0%	8.0%	7.0%	3.0%

LEARNING REFERENCES

- The Behaviour and Design of Steel Structures to EC3 (Fourth Edition), L Gardner, Taylor & Francis 2008
- Design of Steel Structures with Worked Examples to EN1993-1-1 and EN1993-1-8, F. Wald, Research Publishing, 2012
- Design of Steel Structures Eurocode 3: Design of steel structures Part 1-1: General Rules and rules for buildings, ECCS Eurocode Design Manuals, Luis Simões da Silva, Ernst & Sohn, 2010
- Structural Elements Design Manual working with Eurocode, Elsevier BH
- Eurocode 3: Design of steel structures – Part 1-1: General rules and rules for buildings, BS EN 1993-1-1 – 2005
- Manual for the design of steelwork building structures to EC3, IStrucE, 2000
- Designer's Guide to EN 1993-1-1, Eurocode 3: Design of steel structures general rules and rules for buildings, L Gardner, The Steel Construction Institute, 2005
- Mat Lazim Zakaria, Rekabentuk Struktur Kayu Menurut MS 544, Dewan Bahasa & Pustaka, 2001
- Code of Practice For Structural Use of Timber, MS 544: Part 1:2001
- Chu Yue Pun, Ho Kam Seng, Mohd Shukari Midon, Abdul Rashid Ab. Malik - Timber Design Handbook, FRIM, 1997

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