



School of Civil and Environmental Engineering

Trimester 1, 2020

CVEN3303 STEEL STRUCTURES



6 hours per week

Mon, 16:00 – 18:00

Sir John Clancy Auditorium (K-C24-G17)

Thurs, 11:00 – 12:00

Mathews Theatre A (K-D23-201)

Fri, 13:00 – 15:00



Scientia Professor Mark A. Bradford

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<https://www.handbook.unsw.edu.au/undergraduate/courses/2019/CVEN3303/?q=cven3303&ct=all>

A course on design concepts and specific design of structural elements subject to bending, shear and combined bending and axial compression. Topics include: introduction to limit states design and codes of practice (design objectives; strength and serviceability limit states); loads and load combinations (permanent/dead, imposed/live and wind loads); design of structural steel tension members; Euler column buckling; design of stocky and slender compression members; design of laterally supported steel beams, laterally unsupported steel beams (lateral-torsional buckling in bending and shear strength); steel beam-columns (in-plane and out-of-plane failure); steel members subjected to biaxial bending; design of steel frames, steel connections and detailing (force and moment connections).

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The objectives of this course are:

- To become familiar with the different types of structural steel components in the context of the Australian standard for steel structures AS4100.
- To develop an in-depth understanding of the philosophies and principles of structural loading and design.
- To develop the ability to proportion and check the adequacy of steel members subjected to tension, compression, flexure or a combination of flexure and compression.
- To use gained knowledge of solid mechanics to assess the loading capacity of steel members and connections with respect to the material properties of steel and the modes of structural failure.
- To nurture abilities in creative and critical thinking through the opportunity to develop and design new types of structural systems.

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| | <ul style="list-style-type: none">• Review lecture material and textbook• Do set problems and assignments• Join Moodle discussions of problems• Reflect on class problems and assignments• Download materials from Moodle• Keep up with notices and find out marks via Moodle• Find out what you must learn• See methods that are not in the textbook• |
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