

Course Title: **Introduction to Structural Engineering**

Course Code: **ENBU601**

Descriptor Start Date: **31/01/2025**

Descriptor End Date: **31/12/2025**

POINTS: **15.00**

LEVEL: **6**

PREREQUISITE/S: **ENBU613**

COREQUISITE/S: **ENBU600**

RESTRICTION/S: **None**

LEARNING HOURS

Hours may include lectures, tutorials, online forums, laboratories. Refer to your timetable and course information in Canvas for detailed information.

Total learning hours: 150

PRESCRIPTOR

Introduction to structural systems, codes and standards. Determination of design loads. The fundamental concepts of analysing and designing structural members. It provides a grounding in the structural design of steel, timber and concrete structures.

LEARNING OUTCOMES

1. Identify different elements of a building structure (a, b, c, h)
2. Apply engineering design principles through use of different codes and standards (a, b, c, h)
3. Evaluate the forces acting on a building (a, b, c, h)
4. Apply load allocation on supporting members (a, b, c, h)
5. Demonstrate knowledge on structural analysis of simple elements (a, b, c, h)
6. Design fundamentals in structural steel, timber and concrete (a, b, c, d, f, i, k)

Disclaimer: Course descriptors may be amended between teaching periods/semesters

CONTENT

- Introduction to structural systems and connections (including different lateral load resisting systems, supports, etc.)
- Introduction to codes and standards (Limit state design – strength and serviceability limit states, nominal loads and strengths, load factors and strength reduction factors)
- Design loads including permanent, imposed, wind and earthquake
- Load distribution from floors to supporting beams and columns
- Analysis of structural members (under different point load and uniform loading scenarios)
- Basic design of steel, timber, and concrete members

Key to Graduate Capabilities Profile:

- Engineering knowledge
- Problem analysis
- Design/development of solutions
- Investigation
- Tool usage
- The engineer and the world
- Ethics
- Individual and collaborative team-work
- Communication
- Project management and finance
- Lifelong learning

LEARNING & TEACHING STRATEGIES

Lectures, guest speakers, tutorials, class and group discussions, case studies, on-line learning. A blended online and on campus delivery mode is employed to achieve the outcomes of the course.

ASSESSMENT PLAN

Assessment Event	Weighting %	Learning Outcomes
Assignment	40.00	1-4
Final Exam	60.00	1-6

Grade Map	MAP1
	A+ A A- Pass with Distinction
	B+ B B- Pass with Merit
	C+ C C- Pass
	D Fail

Overall requirement/s to pass the course:

To pass this course, students must achieve a minimum overall grade of C-.

LEARNING RESOURCES

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For further information, contact: Te Ara Auaha - Faculty of Design & Creative Technologies

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Principal Programme: **AK3751, Bachelor of Engineering (Honours)**

Related Programme/s: **ICE1
INEXCH1
SABRD1**

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