Geometric Design for Roads

Domestic Fees
$1295 + GST per person

International Fees
$1295 + GST per person

Intakes
13/07/2026
07/09/2026

Campus
Auckland
Christchurch

Duration
2 day

nziht.co.nz

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This course covers geometric design principles specifically for the design of New Zealand roads.

The aim of this course is to develop an understanding of the principles of geometric design, and apply these to design safe, functional and aesthetic road alignments in accordance with the requirements of the latest Austroads guidelines.

Topics include

Standards Overview

- A brief summary of which highway design and line marking guides apply in New Zealand and in various Australian states.

Geometric Design Overview – Austroads Part 3 and NZTA SHGDM

- Design parameters
- Horizontal alignment design, super elevation design and application
- Spirals – when to use them and when NOT to use them; How to position them
- Vertical alignment design
- Co-ordination of horizontal and vertical alignments
- Speed Parameters
- Earthworks and mass haul diagram
- Pavement boxing and the volumetric effects on cuts within cuts and on fills within fills and why this matters!

Software demonstration and Q & A

- Open Roads demonstration

Discussion topics

- How to avoid errors regularly identified by Road Safety auditors and fix them
- Understanding our limits. When to involve other professionals: Geotechnical Engineers, Traffic Engineers, Hydraulic Engineer and Structural Engineers
- What is a good highway design?
- Understanding road construction costs versus standards and the use of multiple minima
- Working together - Understanding the designers' interface between engineers and cad team

On completion of this course participants will

- Understand the fundamentals of geometric design
- Understand the significance of proper geometric design to enhance road safety
- Understand horizontal and vertical alignment design to ensure safe, functional and aesthetic roads

Who should attend

- Engineers and pavement designers from Local Authorities
- Consulting Engineers and Contractors
- University and Polytechnic students.

Additional Information

Minimum numbers apply before a course is confirmed