



2018

TRAINING PROGRAMME

ACADEMIC QUALIFICATIONS | SHORT COURSES
CONFERENCES & SEMINARS



“WITH HIGGINS THERE’S ALWAYS OPPORTUNITIES TO TAKE ON DIFFERENT ROLES.”



“Higgins are supporting me in my study towards a Graduate Diploma in Engineering (Highways) through NZIHT. The course papers include Engineering Mathematics, Contract Management and Wearing Surface Technology and I am about to sit exams for Traffic Engineering and Geometric Design. The courses provides the theoretical background for a lot of physical work that is completed by Higgins.

I love working for Higgins as there are always opportunities to take on different roles and responsibilities within the different teams. I like the fact that I can spend one day in the office, and the next day I’m on the road. The people here are amazing to work with and it really does feel like an extension of your own family.

The best thing about doing this course through Higgins is having the opportunity to study while working fulltime and getting to know the other students - providing more insight through shared learning opportunities”.

Megan Cahill

ANALYST/ENGINEERING CADET - HIGGINS PALMERSTON NORTH

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OPEN LETTER TO INDUSTRY

Welcome to the 2018 New Zealand Institute of Highway Technology (NZIHT) Training Programme. NZIHT specialise in the delivery of skills and training across all sectors of the Roading, Engineering, Civil Construction, Oil and Gas industries

NZIHT is an industry focused training organisation that delivers training both nationally and internationally.

- NZIHT offers formal qualifications from certificate level to post graduate level, our delivery model is well suited for those in full or part-time employment.
- NZIHT also offers a diverse portfolio of over 200 short courses for industry employees furthering their education and professional development. We are continually introducing more courses and are developing additional programmes to widen the portfolio to assist industry in capability building.
- NZIHT manages and coordinates national conferences, road shows, events and symposiums for the public and private sector, we can help you achieve success at your next corporate event.

Relevant and measureable quality training, education and professional development is not just about knowledge gathering

but solutions, business growth and efficiencies, all of which create a resilient, well informed workforce and a competitive advantage.

We are continually introducing more courses and are developing additional programmes to widen the portfolio to assist industry in capability building.

As valued stakeholders we invite you to discuss, explore and target your business training and professional development needs with us. NZIHT remains committed and outcomes focused to industry, employers and our communities.

Best wishes for the 2018 year.

GLEN WEST
Executive Director



ABOUT US

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Every attempt has been made to ensure the information contained in this programme is up to date at publication.

Please contact NZIHT staff for any queries to ensure you have the most up to date information available.

INTRODUCTION

The New Zealand Institute of Highway Technology (NZIHT) is a training organisation that delivers formal qualifications from certificate to post graduate level throughout multiple New Zealand sites. A great way to study for those in full or part time employment. NZIHT also offers a diverse range of public and in-house short courses for industry for delivery both on and off shore. NZIHT has a head office located in New Plymouth and an office located in Hamilton. NZIHT specialises in the delivery of skills and technical training across all sectors of the roading and civil construction industry. The Institute has been closely associated with the civil engineering industry for many years and more recently delivers health, safety and oil and gas training across industries. NZIHT also partners with agencies annually to manage and coordinate National conferences, events and roadshows, and produces year on year surplus to the parent company WITT.

PRINCIPAL ACTIVITIES

Delivery of short courses to industry - off job or in-house training	Delivery of formal qualifications	Conferences/workshops
<ul style="list-style-type: none">Civil and roading technologyRoad InspectionSafety in the trenchesHealth and safetyTraffic controlBitumen safetyPlant operationPavement designUtilities/ codesManagement and construction supervision	<ul style="list-style-type: none">Certificate in Engineering Technology Level 4Certificate in Infrastructure Works Level 2 & 3New Zealand Diploma in Engineering (Civil & Electronic) Level 6Graduate Diploma in Engineering (Highways) Level 7	Plan, manage and deliver 1-2 national conferences and roadshows per year in partnership with the industry.

NZIHT is 100% owned subsidiary of the Western Institute of Technology at Taranaki (WITT)

RANGE OF QUALIFICATIONS DELIVERED BY NZIHT

The qualifications below are offered by NZIHT in association with the Western Institute of Technology in Taranaki (WITT) which is the accredited provider. All academic processes associated with course delivery are carried out in accordance with WITT's Quality Management System.

The range of qualifications delivered by NZIHT give a unique pathway of training for the civil engineering and highway construction industries. All NZIHT course delivery is in a mixed-mode format involving block course attendance followed by directed study. This mode of delivery caters specifically for full time employees or those who for other reasons are unable to attend conventional full-time study courses. Further details on each qualification can be found in this publication or on our website www.nziht.co.nz

NEW ZEALAND CERTIFICATE IN INFRASTRUCTURE WORKS (LEVEL 2)

This is a 41 credit qualification that gives the graduate an understanding of the infrastructure works industry and the health, safety and environmental knowledge required to work safely on site and with others, with limited supervision. This part time programme is delivered in five-block courses over 20 weeks. Students are required to attend all in-class training and complete all assessment work books to achieve this qualification.

NEW ZEALAND CERTIFICATE IN INFRASTRUCTURE WORKS (LEVEL 3)

This 56 credit qualification is the ideal next step for students who have completed the National Certificate in Infrastructure Works (Level 2) or NZ Certificate in Infrastructure Works (Level 2). Graduates of this qualification are able to work safely in a range of infrastructure works contexts with limited supervision. This part time programme is delivered in five-block courses over 20 weeks. Students are required to attend all in-class training and complete all assessment work books to achieve this qualification.

CERTIFICATE IN ENGINEERING TECHNOLOGY (LEVEL 4)

This is a 60 credit programme that aims to provide a good grounding in engineering science and technical methods. Depending on strand, graduates will have broad knowledge covering one of the following areas: Engineering fundamentals; Civil engineering planning; Highway construction; Water utility operations. This programme give a good foundation for further engineering studies at Level 5 and 6 and provides a pathway for students who do not meet entry to New Zealand Diploma in Engineering (Civil), (Electronics) and (Mechanical).

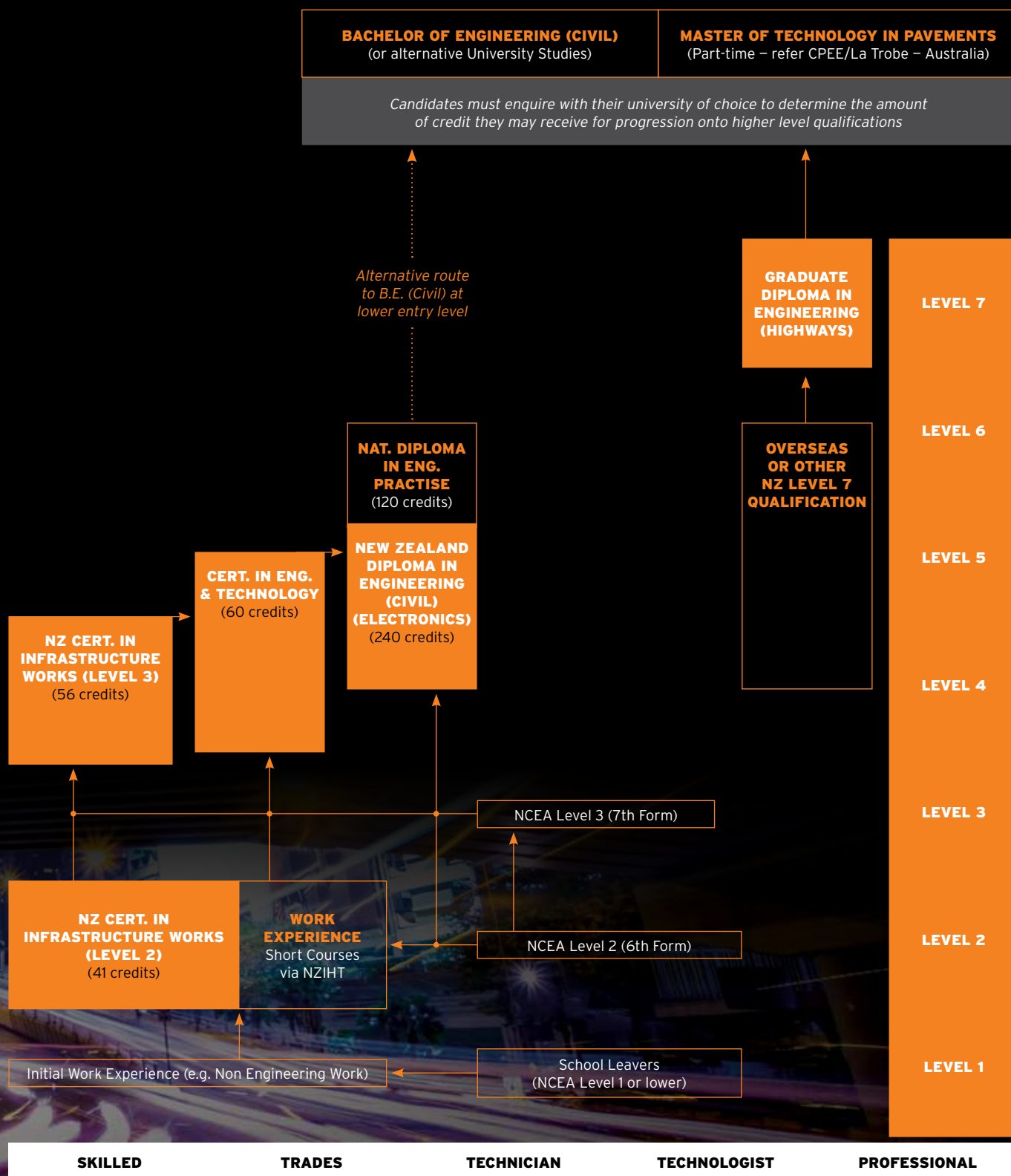
NEW ZEALAND DIPLOMA IN ENGINEERING – CIVIL OR ELECTRONICS (LEVEL 6)

This is a 240 credit Diploma which is equivalent to two years full-time study and can be studied part-time while employed. The aim of the NZ Diploma in Engineering is to provide skilled and competent engineering technicians specialised in either civil or electronics engineering for the New Zealand engineering sector. Graduates will be capable of operating at a technician level scope of practice as outlined by the Dublin Accord (International Engineering Alliance, 2002).

GRADUATE DIPLOMA IN ENGINEERING (HIGHWAYS) (LEVEL 7)

This is a 120 credit Graduate Diploma which is equivalent to one year full-time study and can be studied part-time. This programme is designed to provide holders of engineering qualifications an opportunity to acquire technical knowledge in highway engineering and general knowledge of applied management. It will provide a professional development opportunity for practitioners who hold a relevant tertiary qualification and who seek to broaden, or develop, their knowledge of highway engineering. The principal aim of the Graduate Diploma in Engineering (Highways) is to provide the highway engineering industry with a programme which will equip candidates with the technical and management skills to function at middle management level.

NZIHT INTEGRATED QUALIFICATIONS PATHWAY DIAGRAM



NEW ZEALAND CERTIFICATE IN INFRASTRUCTURE WORKS (LEVEL 2)

This qualification is for people commencing a career in the infrastructure works industry. They may be new to the industry, from school or another industry, or they may be already working in the industry without a qualification.

This qualification is also relevant to pre-apprenticeship programmes relevant to infrastructure works.

The qualification gives the graduate an understanding of the infrastructure works industry and the health, safety

and environmental knowledge required to work safely on site and with others. These people will work under direct supervision.

This is an entry level qualification to the infrastructure works qualification pathways, which leads to the New Zealand Certificate in Infrastructure Works (Level 3).

The New Zealand Certificate in Infrastructure Works (Level 2) is delivered over 20 weeks and requires attendance at five (5) block courses that are either one (1) or two (2) days in length

(ie no more than seven (7) off-job training days). Trainees must complete specified workplace experience tasks plus self-directed and unit standard assessment workbooks.

ENTRY CRITERIA

Entry is open to people working in the infrastructure works industries.

Please note: This programme is not approved for the enrolment of international students.

New Zealand Certificate in Infrastructure Works (Level 2)

All courses are compulsory		Level	Version	NZQF Credits	
BLOCK ONE: Attend TWO (2) days off-job training followed by self-directed study					
CIW2.100	Health and Safety for Infrastructure Works	2		12	12
22283	Demonstrate knowledge of occupational areas and structures in the New Zealand infrastructure works industry	2	2	2	
26720	Describe health, safety, and environmental care at an infrastructure works site	2	2	3	
20868	Demonstrate knowledge of emergency response in the infrastructure works industry	2	2	3	
17593	Apply safe work practices in the workplace	2	4	4	
BLOCK TWO: Attend ONE (1) day off-job training followed by self-directed study					
CIW2.101	Traffic Management	2		3	3
20877	Demonstrate knowledge of working safely at sites under temporary traffic management	2	2	2	
20878	Assist with temporary traffic management for low volume and Level 1 roads	2	1	1	
BLOCK THREE: Attend TWO (2) days off-job training followed by self-directed study					
CIW2.102	Communications and Quality Assurance	2		13	13
9677	Participate in a team or group which has an objective	2	9	3	
12349	Demonstrate knowledge of time management	2	5	3	
17327	Apply communication skills on an infrastructure works site	2	3	3	
27329	Demonstrate knowledge of and apply quality assurance practices to own work area in an infrastructure works operation	3	2	4	

New Zealand Certificate in Infrastructure Works (Level 2) continued...

All courses are compulsory		Level	Version	NZQF Credits	
BLOCK FOUR: Attend One (1) day off-job training followed by self-directed study					
CIW2.103	Worksite Machinery	2		6	6
6475	Describe and complete work records for infrastructure works	2	5	2	
6469	Maintain small machinery used on infrastructure works site	2	6	2	
23285	Use and care for hand tools used for infrastructure works	2	3	2	
BLOCK FIVE: Attend ONE (1) day off-job training followed by self-directed study					
CIW3.104	Earthworks for Civil Construction	3		7	7
6477	Identify, hand spread, and assist in compacting materials for infrastructure works	2	6	3	
27500	Operate compaction equipment for infrastructure works	3	2	4	



Rana Siddharth



Haidee Ward

For further information and an information pack contact:

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NEW ZEALAND CERTIFICATE IN INFRASTRUCTURE WORKS (LEVEL 3)

The purpose of this qualification is to provide the infrastructure works industry with people who have a broad range of infrastructure works skills, including the safe and effective operation of basic plant and equipment.

It is the cornerstone qualification for those graduates wanting to move into technical roles in the civil works, surfacing construction and manufacturing, pipe installations and utilities maintenance contexts.

Graduates of this qualification are able to work safely in a range of infrastructure works contexts with limited supervision.

This qualification builds on the New Zealand Certificate in Infrastructure Works (Level 2) and leads to level four qualifications in the Infrastructure and/or Civil Works industries.

The New Zealand Certificate in Infrastructure Works (Level 3) is a part-time programme delivered over 20 weeks and requires attendance at five (5) block courses that are either one (1) or two (2) days in length (ie no more than nine (9) off-job training days). Trainees must complete specified workplace experience tasks plus self-directed and unit standard assessment workbooks.

ENTRY CRITERIA

Entry is open to people working in the infrastructure works industries.

Applicants should demonstrate an ability to succeed in tertiary study shown by the completion of any of the following qualifications or courses of study:

- National Certificate in Infrastructure Works (Level 2)
- or**

- New Zealand Certificate in Infrastructure Works (Level 2)
- or**
- NCEA Level 1 Literacy and Numeracy requirements

Applicants who do not meet the academic entry criteria may be admitted to the programme of study if they are able to demonstrate:

- Equivalent knowledge
- Equivalent knowledge/capability by the testimony of an employer.

Please note: This programme is not approved for the enrolment of international students.

New Zealand Certificate in Infrastructure Works (Level 3)

All courses are compulsory		Level	Version	NZQF Credits	
BLOCK ONE: Attend TWO (2) days off-job training followed by self-directed study					
CIW3.300	Safe Work Practices	3		12	12
20866	Work safely on an infrastructure works site	3	2	7	
20875	Demonstrate knowledge of slinging, lifting, moving, and placing loads using mobile plant	2	3	5	
BLOCK TWO: Attend TWO (2) days off-job training followed by self-directed study					
CIW3.301	Protection and Services	3		10	10
27501	Demonstrate knowledge of protection and support systems for excavation on an infrastructure work site	3	1	2	
6479	Locate and identify services for infrastructure works	3	6	5	
27201	Mitigate environmental damage caused by a contamination incident	3	2	3	

New Zealand Certificate in Infrastructure Works (Level 3) continued...

All courses are compulsory		Level	Version	NZQF Credits	
BLOCK THREE: Attend TWO (2) days off-job training followed by self-directed study					
CIW3.302	Communications and Industry Documentation	3		12	12
27329	Demonstrate knowledge of and apply quality assurance practices to own work area in an infrastructure works operation	3	2	4	
17327	Apply communication skills on an infrastructure works site	2	3	3	
6475	Describe and complete work records for infrastructure works	2	5	2	
6476	Read and interpret infrastructure works plans	3	5	3	
BLOCK FOUR: Attend One (1) day off-job training followed by self-directed study					
CIW3.303	Soil and Compaction	3		8	8
17328	Demonstrate fundamental knowledge of earthworks	3	3	5	
25831	Describe road construction materials and their compaction	3	2	3	
BLOCK FIVE: Attend TWO (2) days off-job training followed by self-directed study					
CIW3.304	Small Plant and Equipment	3		16	16
19675	Describe and operate a road saw	3	4	4	
29028	Demonstrate knowledge of and operate a handheld saw for infrastructure works activities	3	1	6	
27500	Operate compaction equipment for infrastructure works	3	2	4	
28715	Load, secure, and transport infrastructure works materials, small plant, and equipment	3	1	2	

For further information and an information pack contact:

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PO Box 4273, New Plymouth 4310

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CERTIFICATE IN ENGINEERING TECHNOLOGY (LEVEL 4)

This certificate aims to provide a good grounding in engineering science and technical methods. Depending on the strand chosen graduates will gain broad knowledge covering one of the following areas:

- Engineering Fundamentals
- Civil Engineering Planning
- Highway Construction
- Water Utility Operations

Certificate courses provide a good foundation for further engineering studies at Level 5 and 6:

- NZ Diploma in Engineering.

Graduates of this Programme may be employed in the civil infrastructure industry in various roles such as engineering cadet, worksite team leader and assistant project engineer.

ENTRY CRITERIA

Academic Achievement

Applicants should demonstrate an ability to succeed in tertiary study, shown by the completion of any of the following qualifications or courses of study:

- 48 or more credits at NCEA Level 1, and must include NCEA Level 1 requirements for Literacy and Numeracy; and/or
- Equivalent NQF Unit Standards

Applicants whose first language is not English, or who come from a country where the language of instruction in schools or other teaching institutions is not English, are required to provide evidence of having passed such tests of English language competence as detailed in Policy and Procedure English Language Proficiency.

Life Skills/Work Experience

Applicants who do not meet the academic entry criteria above may be admitted to the programme of study if they are able to demonstrate:

- Equivalent knowledge and skills; and/or
- Previous and relevant life skills or work experience; and/or
- Other formal or informal study such as to suggest likelihood of successful programme completion.

Mathematics Skills

Students require a basic level of mathematics competency at NCEA Level 1. Applicants who do not quite meet this standard will be advised to select the appropriate Elective Foundation course (refer Table 1) to be completed during the early part of their studies.

Method of Delivery - Block courses

The programme is delivered using a mixed mode format comprising contact sessions, called Study Blocks, and structured

self-directed study. The self-directed and tutor-directed study component is done in the student's own time at home with the aid of course notes and a proposed work programme. Interaction with the course presenter and fellow students, as and when required, is encouraged via e-mail, telephone or the NZIHT Course Management System website (CMS).

The duration of the Study Blocks varies according to the credit rating and the nature of individual courses. The typical duration is 4 to 5 days per course. The Study Block period for each course is split into two half blocks, called Block 1 and Block 2. Block 1 takes place during the first half of the semester, and Block 2 towards the end of the semester, shortly before the final examination.

All courses are offered on a semester basis. Semester 1: February to June; Semester 2: July to November.

Programme Length

This is a one semester (20 week) full time programme of study which can also be completed part time over two years.

Table 1 Certificate In Engineering Technology Courses: Elective Foundation Courses

Code	Course Title	See Note 1	Level	Credits	Pre Or Co Requisites
ONE only foundation course can be used for credit towards award of a certificate					
CET2.001	Core Engineering Skills	E	2	15	
CET2.002	Core Skills (Civil & Highway)	E	2	15	
CET3.001	Introduction to CAD	E	3	15	
CET3.002	Mathematics (Introduction)	E	3	15	
Total Credits that can be used for award of this certificate				15	

Note: Not all foundation or strand electives will be offered in any one year. Courses will only be offered if there is sufficient demand to ensure viability.

Strand A - Core Engineering Courses

Code	Course Title		C or E ¹	Level	Credits	Pre Or Co Requisites
<i>Students must complete the compulsory course plus at least TWO strand electives</i>						
CET4.113	Technical Literacy	●	C	4	15	
CET4.111	Engineering Fundamentals	●	E	4	15	CET3.002 – Co
CET4.112	Engineering Mathematics 1	●	E	4	15	CET3.002 – Pre
CET4.211	Materials (Civil)		E	4	15	
CET4.401	Electrical Principles	○	E	4	15	
Total Strand A Credits Required					45 or 60²	

¹ Code Key: C=Compulsory; E=Elective.² Students may select ONE Elective Foundation course plus THREE Strand A courses OR FOUR Strand A courses - a total of 60 credits is required including the Strand Compulsory course.**Strand B - Highway Engineering Courses**

Code	Course Title		C or E ¹	Level	Credits	Pre Or Co Requisites
<i>Students must complete the compulsory course plus at least TWO strand electives</i>						
CET5.204	Highway Engineering 1		C	5	15	CET2.002 – Co ^{3*}
CET4.212	Land Surveying 1		E	4	15	CET2.002 – Co ^{3*}
CET5.207	Geotechnical Engineering 1		E	5	15	CET2.002 – Co ^{3*}
CET6.202	Highway Engineering 2		E	6	15	CET5.204 – Pre
Total Strand B Credits Required					45 or 60²	

¹ Code Key: C=Compulsory; E=Elective.² Students may select ONE Elective Foundation course plus THREE Strand B courses OR FOUR Strand B courses - a total of 60 credits is required including the Strand Compulsory course.³ Applicants who can provide evidence of appropriate prior learning and/or work experience can, with the approval of the Programme Manager, be exempted from this co-requisite requirement.

* CET3.002 is an acceptable alternative co-requisite.

COLOUR CODE KEY

- Course can be cross credited to NZDE (Civil)
- Course can be cross credited to NZDE (Mechanical) and (Electrical)
- Course can be cross credited to NZDE (Electrical)

Strand C - Civil Engineering Courses

Code	Course Title	C or E ¹	Level	Credits	Pre Or Co Requisites
<i>Students must complete at least THREE of the following strand electives</i>					
CET4.211	Materials (Civil)	E	4	15	
CET4.212	Land Surveying 1	E	4	15	CET2.002 – Co ^{3*}
CET5.207	Geotechnical Engineering 1	E	5	15	CET2.002 – Co ^{3*}
CET4.215	Civil Construction Supervision	E	4	15	
CET5.201	Structures 1	E	5	15	CET4.111 – Pre
CET5.202	Civil and Structural Drawing	E	5	15	CET4.113 – Pre
CET5.203	Hydraulics (Civil)	E	5	15	CET4.111 – Co CET4.112 – Co
Total Strand C Credits Required				45 or 60²	

¹ Code Key: C=Compulsory; E=Elective.² Students may select ONE Elective Foundation course plus THREE Strand C courses OR FOUR Strand C courses – a total of 60 credits is required.³ Applicants who can provide evidence of appropriate prior learning and/or work experience can, with the approval of the Programme Manager, be exempted from this co-requisite requirement.

* CET3.002 is an acceptable alternative co-requisite.

Strand D - Water Utilities Engineering Courses

Code	Course Title	C or E ¹	Level	Credits	Pre Or Co Requisites
<i>Students must complete the compulsory course plus at least TWO strand electives</i>					
CET4.213	Core Engineering Skills (Water)	C	4	15	
CET4.214	Water & Wastewater (Introduction)	E	4	15	
CET6.205	Water & Wastewater Systems	E	6	15	CET4.213 – Pre CET4.214 – Pre
CET6.206	Water & Waste Management	E	6	15	CET4.214 – Pre
Total Strand D Credits Required				45 or 60²	

¹ Code Key: C=Compulsory; E=Elective.² Students may select ONE Elective⁴ from within the Programme, plus THREE Strand D courses OR FOUR Strand D courses – a total of 60 credits is required including the Strand Compulsory course.⁴ This elective can, with the approval of the Programme Manager, be selected from the Foundation courses or any of the other Strands with a coherent relationship with Strand D study Programme.**For further information and an Information Pack contact:**

The Programme Administrator, NZ Institute of Highway Technology
PO Box 9296, Waikato Mail Centre, Hamilton 3240

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NZ DIPLOMA IN ENGINEERING CIVIL & ELECTRONICS STRANDS (LEVEL 6)

The Western Institute of Technology at Taranaki (WITT), through the NZIHT, offers the two NZDE disciplines, i.e. NZDE (Civil) and NZDE (Electronics), in block course format. This method of delivery, which involves *Study Blocks* and structured *self-directed study*, caters specifically for the needs of students who are unable to attend a conventional full-time programme. It is ideally suited for cadetship type training.

A Career in Civil Engineering

The NZDE (Civil) prepares a student for a career in the civil engineering industry. Civil engineers plan, design and construct the infrastructure in which we live and work. This includes the establishment of facilities like roads, railways, airports, water supply, drainage, wastewater disposal, bridges, dams, multi-storey buildings, tunnels and other public works.

Civil engineers are employed by a wide range of different organisations including district and city councils, engineering consultants, contractors, transportation agencies such as Transit and LTSA, academic institutions, environmental agencies, etc.

A Career in Electronics Engineering

The NZDE (Electrical) prepares a student for a career in the electronics industry. Electronics engineers design, develop and oversee production of electronic equipment and systems in a variety of industries including:

- Telecommunications
- Research, development and manufacture of products
- Consumer appliances and devices
- Manufacturing and processing

MINIMUM ACADEMIC ENTRY CRITERIA

For entry to this programme, applicants are required to have -

NCEA Level 2*, and:

- A minimum total of 48 credits at level 2 in four subjects including at least 12 credits in mathematics (preferably achievement standards in algebra, calculus or trigonometry, **or**

- equivalent qualifications (e.g. International Baccalaureate or Cambridge), **or**
- equivalent credits from appropriate trades training and/or demonstrated skills and experience.

* including a minimum of 10 literacy credits at level 1 or higher (for those who achieved NCEA Level 2 before 2013).

Notes

1. Applicants who do not have the required NCEA Level 2 mathematics skills will be required to complete the foundation course CET3.002 Mathematics (Introduction).
2. There is a "Special Admissions" category that caters for applicants who do not meet the normal admission requirements but have the potential for successful completion of the programme based on maturity, work experience and relevant prior learning.

METHOD OF DELIVERY

Block courses

The programme is delivered using a mixed mode format comprising contact sessions, called *Study Blocks*, and structured *self-directed study*. The self-directed and tutor-directed study component is undertaken in the student's own time at home with the aid of course notes and a structured work programme. Interaction with the course presenter and fellow students, as and when required, is encouraged via e-mail, telephone or the NZIHT Course Management System website (CMS).

The duration of the *Study Blocks* varies according to the requirements of individual courses. The typical duration is 4 to 6 days per course. The *Study Block* period for each course is normally split into two half blocks, called *Block 1* and *Block 2*. *Block 1* takes place during the first half of the semester, and *Block 2* towards the end of the semester. All courses are offered on a semester basis. Semester 1: February to June; Semester 2: July to November.

The *Study Blocks* can be scheduled to take place at venues throughout New Zealand so as to best suit the needs of

stakeholders (industry, students and NZIHT). Current venues used for NZDE delivery includes Hamilton, Auckland, Palmerston North and Christchurch. This method of delivery is ideally suited for cadetship type training.

METHOD OF DELIVERY

NZDE (Civil)

NZIHT does not currently offer the structural engineering elective at the higher level, but instead focuses on the general civil engineering themes. This combination of courses has been chosen with a view to provide students with a broad-based knowledge across the whole spectrum of Civil Engineering.

The complete list of courses offered by NZIHT is shown in Table 1. All courses on the list are offered every year. A timetable of courses on offer in each semester of a particular year is published in the annual Programme Brochure, obtainable from the Programme Administrator.

NZDE (Electronics)

NZIHT began the gradual phasing in of the delivery of the "Telecommunications Specialisation" of this programme in 2013. The four courses that are common with NZDE(Civil) are immediately available in all the venues where Civil is offered. The remaining "electronics" courses will be phased in at a rate dictated by demand. The complete list of courses is shown in Table 3.

For further information and an Information Pack contact:

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Hamilton 3240

T. (07) 850 8330 **E.** admin@nziht.co.nz

Table 1 - NZ Diploma in Engineering (Civil) Programme

Code Key: C=Compulsory; E=Elective.

Code	Course Title	C or E	Level	Credits	Pre Or Co Requisites
<i>12 Compulsories + FOUR electives (at least THREE at Level 6)</i>					
COMPULSORY COURSES					
DEC4.101	Engineering Fundamentals	C	4	15	
DEC4.102	Engineering Mathematics 1	C	4	15	
DEC4.103	Technical Literacy	C	4	15	
DEC6.101	Engineering Management	C	6	15	
DEC6.102	Engineering Project	C	6	15	Minimum of 45 credits at Level 5 + DEC5.207, DEC4.201, DEC4.103
CIVIL DISCIPLINE COMPULSORY					
DEC4.201	Materials (Civil)	C	4	15	
DEC5.207	Geotechnical Engineering 1	C	5	15	
DEC5.201	Structures 1	C	5	15	DEC4.101
DEC4.202	Land Surveying 1	C	4	15	
DEC5.202	Civil & Structural Drawing	C	5	15	DEC4.103
DEC5.203	Hydraulics (Civil)	C	5	15	DEC4.101 (Co-), DEC4.102 (Co-)
DEC5.204	Highway Engineering 1	C	5	15	
Electives – four to be selected, of which three must be at level 6					
DEC5.205	Engineering Surveying	E	5	15	DEC4.202
DEC5.206	Structures 2	E	5	15	DEC5.201, DEC4.102 (Co-)
DEC6.201	Geotechnical Engineering 2	E	6	15	DEC5.207
DEC6.205	Water & Waste Water Systems	E	6	15	DEC5.203
DEC6.206	Water & Waste Water Management	E	6	15	
DEC6.202	Highway Engineering 2	E	6	15	DEC5.204
DEC6.203	Traffic Engineering	E	6	15	DEC4.102 (Co-)
DEC6.204	Structures 3	E	6	15	not offered by NZIHT in 2018
DEC6.207	Land Surveying 2	E	6	15	

Table 2 – NZ Diploma in Engineering (Electronics) Programme

Code Key: C=Compulsory; E=Elective.

Code	Course Title	Level	Pre Or Co Requisites
COMPULSORY COURSES			
DEL4.101	Engineering Fundamentals	4	-
DEL4.102	Engineering Mathematics 1	4	-
DEL4.103	Technical Literacy	4	-
DEL4.401	Electrical Principles	4	-
DEL4.402	Electrical and Electronic Applications	4	DEL5.403
DEL5.403	Electronic Principles	5	-
DEL5.408	Introduction to Networks	5	-
DEL5.405	Computer Programming 1	5	-
DEL5.414	Electronic Manufacturing 1	5	DEL5.403
DEL6.101	Engineering Management	6	-
DEL6.102	Engineering Project	6	Minimum of 45 credits Level 5 + DEL4.103, DEL6.101
DEL6.412	Computer Programming 2	6	DEL5.405

Electives are chosen from one of three specialisations – Electronics, Computing or Data Communication

Code	Course Title	Level	Pre Or Co Requisites
Electronic Specialisation Electives – four required at least two must be Level 6			
DEL5.407	Electronics 1	5	DEL5.403
DEL6.402	Electronics 2	6	DEL5.401
DEL5.406	Microcontrollers 1	5	DEL4.103
DEL6.417	Microcontrollers 2	5	DEL5.406
DEL6.408	Electronic Manufacturing 2	6	DEL5.414
DEL5.418	Engineering Mathematics 2	5	DEL4.102

Electives continued on following page...

Electives are chosen from one of three specialisations – Electronics, Computing or Data Communication continued...

Code	Course Title	Level	Pre Or Co Requisites
Computer Networking Specialisation Electives – four required at least two must be Level 6			
DEL5.409	PC Engineering	5	-
DEL5.410	Routing and Switching Essentials	5	DEL5.408
DEL6.415	Scaling Networks	6	DEL5.410
DEL6.416	Connecting Networks	6	DEL6.415
DEL6.403	Networking Operating Systems	6	DEL5.409
DEL6.408	Electronic Manufacturing 2	6	DEL5.414
DEL5.418	Engineering Mathematics 2	5	DEL4.102
Recommended Instrumentation & Control Specialisation Electives – four required at least two must be Level 6			
DEL5.410	Routing and Switching Essentials	5	DEL5.408
DEL5.420	Data Telecommunications Intermediate	5	DEL5.403, DEL5.408
DEL6.408	Electronic Manufacturing 2	6	DEL5.414
DEL6.415	Scaling Networks	6	DEL5.410
DEL6.416	Connecting Networks	6	DEL6.415
DEL5.418	Engineering Mathematics 2	5	DEL4.102



Aarin Bang



Josh Paku



GRADUATE PROFILE

NZ Diploma in
Engineering (Civil)

Sandi Morris

SENIOR CIVIL TECHNICIAN

Sandi has successfully completed her studies with NZIHT, graduating in May of 2017 and is currently working for Opus International Consultants Ltd in Palmerston North.

She started this qualification while working as the Transportation Planner at Palmerston North City Council, where she was in charge of managing the city council's assets and delivery of Rooding programmes. Palmerston North City Council encouraged her to undertake the NZ Diploma of Engineering (Civil) as part of her professional development within the organisation, allowing her time to study away from the office despite her direct team's heavy workloads. The council felt that the qualification would assist in helping Sandi grow as a professional within the transportation industry.

After 14 years at PNCC and completing the Diploma with NZIHT, Sandi has now gained employment with Opus International Consultants Ltd. As a senior civil technician, she consults with organisations and industries, including her former employer PNCC.

"Studying while working, as well as being a full-time mum was challenging" says Sandi. "NZIHT's unique learning delivery within 'Study Blocks', meant that I could plan ahead and fit my studies around the demands of work and family life".

"The block courses were rewarding for me as a visual learner and also a nice break away from work and life distractions; this time was precious and invaluable to my exam success. At my age, I had forgotten many study techniques and one tutor took the time to teach me about mapping for exam preparation. Without this special attention, I don't think I would have passed some of the more technical exams - I am so grateful for this support".

When asked "Why would you recommend other students to study with NZIHT" she replied.

"NZIHT offers the freedom to study at your own pace, with the tutors and admin teams providing support throughout your chosen study period so you can obtain that qualification you are seeking. You are supported every step of the way, and it is a great way to work and study part time".

GRADUATE DIPLOMA IN ENGINEERING (HIGHWAYS) (LEVEL 7)

The Graduate Diploma in Engineering (Highways) (GradDipEng (Highways)) is offered by NZIHT in partnership with the Western Institute of Technology at Taranaki (WITT).

The GradDipEng(Highways) is a 120 credit one-year (full-time equivalent) qualification designed to provide holders of civil engineering qualifications an opportunity to acquire technical knowledge in highway engineering and general knowledge of applied management. It will provide a professional development opportunity for practitioners who hold a relevant tertiary qualification and who seek to broaden, or develop, their knowledge of highway engineering. The Graduate Diploma will also prepare them for further study at other institutions and universities in New Zealand and overseas.

Applicants will typically include:

- Bachelor of Engineering graduates, local or overseas, who have little or no highway engineering background;
- Non-engineering graduates, e.g. persons holding science, geology or similar degrees.

The principal aim of the GradDipEng (Highways) is to provide the highway engineering industry with a programme which will equip candidates with the technical and management skills to function at middle management level.

DELIVERY FORMAT

The programme is delivered in block course format. Students can either complete the programme within a year or complete the programme part-time over a period of two to two and a half years.

A typical format for a 15-credit course will be one or more study blocks of approximately 5-10 days duration, combined with self-directed study with distance learning support.

The learning cycle during each term consists of the following:

- Study Blocks (class contact) of approximately 5-10 working days per course, arranged in a delivery permutation that best suits the requirements of the courses and the group.
- Self-directed study period during which students complete course work and set assignments in their own time, and prepare for the final examination. During this time course presenters are available via e-mail or telephone to attend to individual inquiries. An on-line Course Management System (CMS) provides a communication forum and a platform for on-line learning support.
- A final written examination at the end of course.

TOPICS INCLUDE

- Wearing Surface Technology
- Highway Engineering Fundamentals
- Traffic Engineering
- Contract Management
- Drainage Design
- Geometric Design
- Pavement Design
- Land Surveying for Engineers

Entry and selection criteria apply.

For further information contact:

Jill Warner, Programme Coordinator
T. (06) 759 7065 ext 709
www.nz iht.co.nz



Besafe in collaboration with NZIHT facilitate training to raise to the standard of health and safety within the work environment and wider community.

Taranaki Passport

This one day course provides health and safety information for those working on Taranaki Oil & Gas and associated sites, and includes safety systems and procedures common to many sites in the region and promotes responsibility, safe working practices and behaviours.

Hazard and Effect Management Process Safety

This one day course includes the use of Job Hazard Analyses, toolbox meeting, step back 5 x and other common systems used to manage hazards in the workplace.

Confined Spaces

This two day course provides knowledge of confined spaces. Identifies control measures to eliminate, isolate, and minimise the risk of hazards in confined spaces. Monitoring testing requirements and the responsibilities of people entering confined and observing work being undertaken.

Working at Heights

This two day course provides the skills and knowledge required to install and use temporary height safety systems and safety harnesses while working at height according to statutory regulations and standards and manufacturers operating instructions.

**For further information
on any of these courses, or to
discuss your training needs, contact:**

Joanna Brown Oil & Gas Manager

DDI. 06 757 3258 or
0800 948 896 ext 9065

E. joanna.brown@witt.ac.nz

Hazardous Areas and Safe Practices

This course is designed to give people the essential knowledge of explosive atmospheres and hazardous areas, including identifying hazardous areas, sources of ignition and the properties of hazardous materials along with the roles and responsibilities of all parties, regulations, standards and codes of practice relating to hazardous areas.

TOPICS

- Classification of hazardous areas and types of hazards
- Classifying electrical apparatus for use in hazardous areas
- Protection methods
- Properties of hazardous materials; flammable, non-flammable and reactive materials
- Upper and lower explosive limit, flash point and ignition temperature
- Sources of hazardous materials data
- Standards, regulations and codes of practice relating to hazardous areas legal and responsibilities of all parties

ON COMPLETION, PARTICIPANTS WILL HAVE THE KNOWLEDGE TO

- Identify hazardous areas
- Explain the properties of hazardous materials
- Identify and describing sources of ignition
- Knowledge of the standards and codes of practice relating to hazardous areas

WHO SHOULD ATTEND

Anyone working in a classified zone or Hazardous Area site.

National Certificate in Electrical Apparatus in Explosive Atmospheres (Level 4)

This national qualification is designed for registered electrical practitioners to develop competency in working with electrical apparatus in explosive atmospheres and gain competency required to implement industry safety requirements specified in legislation and regulatory standards.

TOPICS

- Classification of hazardous areas and types of hazards
- knowledge of electrical apparatus in explosive atmospheres
- Reporting on the integrity of explosion-protected apparatus
- Installing, maintaining and attending to break downs of electrical apparatus in explosive atmospheres.

ON COMPLETION, PARTICIPANTS WILL HAVE THE KNOWLEDGE TO

Graduates will be able to access electrical apparatus work in the area of explosive atmospheres which are present in a variety of industries and disciplines throughout New Zealand.

RANGE OF SHORT COURSES OFFERED BY NZIHT

REGISTRATION DETAILS

SHORT COURSE REGISTRATION FORM

ASPHALT/CHIPSEAL COURSES

Applying Bitumen Emulsions and Poly-Modified Binders (1 Day)	26
Asphalt Pavement Construction Essentials (1 Day)	26
Asphalt Production Essentials (2 Days)	27
Chipseal Design (2 Days)	30
Chipseal Materials (Half Day)	31
Pavement Surfacing (1 Day)	42
The Fundamentals of Asphalt Mix (2 Days)	48

BITUMEN COURSES

Bitumen – Basic Safety (1 Day)	27
Bitumen – Managing the Risk (1 Day)	28
Bitumen Plant and Tanker Operator (1 Day)	28
Bitumen Rheology & Performance (1 Day)	29
Bitumen Sprayer Operator (1 Day)	29

BRIDGES/RIVERS

Bridge Inspection and Maintenance Procedures (2 Days)	29
Bridge and Other Significant Highway Structures Inspection (2 days)	30
Managing Flooding and Erosion Risks from Rivers (1 Day)	38

MICROSOFT COMPUTER COURSES

Microsoft Excel – Improving Spreadsheets (1 Day)	38
Microsoft Project – Resource Management (1 Day)	39
Microsoft Project – Task Management (1 Day)	39
Microsoft Word – Improving Documents (1 Day)	40

PROJECT/CONTRACT MANAGEMENT

Preparing a Tender (1 Day)	42
Successful Project Management (2 Days)	47
Understanding NZS3910:2013 Conditions of Contract (2 Days)	49
Understanding NZS3916 and NZS3917 (Half Day)	50
Understanding the Construction Contracts Act 2002 (Half Day)	50
Understanding the Tender Process (1 Day)	50

QUALITY MANAGEMENT

An Introduction to Quality Management (1 Day)	25
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ROADING CONSTRUCTION AND MAINTENANCE

Aggregates for Pavement Construction (1 Day)	25
Compaction – Operator Knowledge	31
Compaction – Advanced Knowledge	32
Competent Pipeline Rehabilitation (1 Day)	32
Construction and Maintenance of Road Drainage Systems (1 Day)	33

Environmental Risks of Construction (1 Day)	34
Geomechanics for New Zealand Roading (1 Day)	34
Inspecting Roads & Establishing Maintenance Needs (1 Day)	35
Nuclear Density Meter (NDM) – Licence Course	41
Nuclear Density Meter (NDM) – What you need to know	41
Road Condition Rating – Sealed Roads (1 or 2 Days)	44
Stabilisation of Road Pavements (1 Day)	47
Survey and Set Out (1 Day)	48
Understanding Quality Pavement Construction (2 Days)	51
Working with Concrete – Basic Skills (1 Day)	51

ROADING DESIGN

Geometric Design for Roads (2 Days)	35
Pavement and Rehabilitation Design (2 Days)	42
Pavement Investigation, Design and Construction Testing (1 Day)	42
Road Lighting Course A – to AS/NZS 1158 (1 Day)	45
Road Lighting Course B – Design Training (1 Day)	45

SAFETY COURSES

Creating a Health and Safety Culture (1 Day)	33
Maintenance and Safe Use of Small Plant and Machinery (1 Day)	38
Operation and Safe Use of a Road/Concrete Saw (1 Day)	41
Safety in Trenches (1 Day)	46
Slinging, Lifting, Moving & Placing (1 Day)	46

SUPERVISOR/LEADERSHIP COURSES

Agile Management (2 Days)	25
Conflict Management Skills (2 Days)	32
Effective Leadership (2 Days)	33
Leading High Performing Teams (1 Day)	36
Process Improvement (2 Days)	43
Productive Conflict (1 Day)	43
Supercharged Supervisors Toolkit (1 Day)	47
Time Management (1 Day)	49
Transforming Your Leadership (1 Day)	49

TEMPORARY TRAFFIC MANAGEMENT

Kerbside Collection Traffic Leader (KCTL) (Half Day)	36
Level 1 – Basic Traffic Controller (1 Day)	37
Level 1 – Site Traffic Management Supervisor (STMS) (2 Days)	37
Refresher – Level 1 STMS (1 Day)	44

UTILITIES

Identify, Locate and Protect Services (1 Day)	35
Reinstatement of Service Trenches (1 Day)	44
The National Utilities Code – What On-site Staff Should Know (1 Day)	48
Understanding the National Utilities Code (2 Days)	50

SHORT COURSE REGISTRATION DETAILS

REGISTRATION CLOSE-OFF DATES

Minimum numbers of participants are necessary for the delivery of any course. With this in mind, and to ensure participants are not inconvenienced due to last minute cancellations, we require registration for all courses five (5) working days prior to each course date. Late registrations will be accepted up to the course day only if spaces are available.

NZIHT reserves the right to alter course dates, postpone or cancel courses due to unforeseen circumstances or where numbers are insufficient. Maximum attendance numbers may also be established to ensure optimum learning conditions for all participants.

DEBT RECOVERY

Attendees will be responsible for any debt recovery costs on outstanding invoices.

CREDIT CARD SURCHARGE

A 3% surcharge will be applicable on all credit card transactions.

CONFIRMATION OF ATTENDANCE

Confirmation of final course details will be dispatched from NZIHT five (5) working days prior to the course date. This is if minimum numbers for the course are met.

CANCELLATION AND TRANSFERS

Participant withdrawals must be notified in writing. Withdrawals after the close-off date (5 working days prior to the course date) will be charged at 50% of the full course fee. Substitute or replacement participants will be welcome to attend. Non-attendance of participants on the course date will be charged at the full course fee.

CONTACT

Short Course Co-ordinators
NZ Institute of Highway Technology Ltd
5 Young Street
P O Box 4273
NEW PLYMOUTH 4340

P. (06) 759 7065
E. admin@nizht.co.nz

www.nizht.co.nz

RANGE OF NZIHT TRAINING COURSES OFFERED

TRAINING

We offer a range of training services to help achieve your goals of training and development.

CONSULTANCY

NZIHT Technical and Educational staff are available to assist your company in an advisory capacity.

Services available include training needs analysis, technical support and unit standard based training.

Please contact us for a proposal.

IN-HOUSE PROGRAMMES

All or parts of our short course can be customised to meet any organisation's local or special needs. Enquiries are welcome.

A registration form for copying is on the next page of this programme, and there is also one at the back of the programme.

PRIVACY INFORMATION

The New Zealand Institute of Highway Technology Limited (NZIHT) is obliged under the Education Amendment Act to provide a variety of personal data and statistical information. We also exchange this information with other parties as listed below. Failure to provide all the information requested on the course registration form may result in non-enrolment. Information collected may be used by or exchanged with.

- NZ Qualifications Authority for Records of Learning.
- NZIHT staff (including use for marketing purposes) and their consultants.
- Industry Training Organisations, NZTA and Road Controlling Authorities.
- Education and Training Support Agency and scholarship providers.
- Staff of any other training providers whose course you may be involved with.
- Other agencies where disclosure is required for data matching or the maintenance of law and order as defined in the Privacy Act 1993.

You have the right to see and correct if necessary any information which you have provided. Names, addresses and programmes of study may also be available for approved research purposes.

SHORT COURSE REGISTRATION FORM

I / WE WILL ATTEND THE FOLLOWING NZIHT SHORT COURSE

Please fill details in below.

COURSE NAME

COURSE LOCATION

COURSE DATE

NAME OF PARTICIPANT (1)

NAME OF PARTICIPANT (2)

NAME OF PARTICIPANT (3)

NAME OF PARTICIPANT (4)

ORGANISATION NAME & POSTAL ADDRESS

CONTACT PERSON (All correspondence will be forwarded to the Contact person)

CONTACT'S JOB TITLE

CONTACT'S PHONE NUMBER

CONTACT'S EMAIL

PURCHASE ORDER NUMBER

TERMS AND CONDITIONS

Note: Late registrations will be accepted if space is available.

Please note: Confirmation letters will be sent five working days prior to the course date.

Cancellations: Participant withdrawals must be notified in writing. Withdrawals after the close-off date (5 working days prior to the course date) will be charged 50% of the course fee. Non attendance will also be charged the full rate. Substitute participants are welcome. Please refer to our current Training Programme for full registration details and conditions.

Attendee will be responsible for any debt recovery costs on unpaid fees.

The NZIHT reserves the right to alter course dates, postpone or cancel courses due to unforeseen circumstances or where numbers are not sufficient.

Course cost \$

Plus 15% GST \$

Cheque enclosed for: \$

Please make payable to NZ Institute of Highway Technology Ltd, or

Please invoice us for: \$

* NZIHT approved account holders only. Alternatively prepayment will be required.

Please charge my credit card: \$

Name on card

Card number

Expiry date Security Code

3 digit number on back of card

* 3% surcharge will be applicable on all credit card transactions

Post or email back at least **two weeks prior** to the course date:

The Course Co-ordinator

New Zealand Institute of Highway Technology Ltd
P O Box 4273, New Plymouth, 4340

P. (06) 759 7065

E. admin@nziht.co.nz

NZIHT SHORT COURSES

AGGREGATES FOR PAVEMENT CONSTRUCTION

1 DAY

PRESENTER Clare Dring

This course identifies the properties and characteristics of aggregates and systems for quarrying, storage, selection and handling, so that these properties are not altered and their quality remains consistent until placements in the pavement.

Future specifications will incorporate statistical-based acceptance criteria and this course reflects this.

TOPICS

- Function of structural layers in a pavement
- How aggregates influence pavement performance
- Selection of pavement aggregates - sealed and unsealed pavements
- Storage, handling and compaction of aggregate for pavements
- Role of clay minerals
- Source rock characteristics
- Aggregate production and properties of the product
- Quality assurance, quality control statistical-based process control and acceptance criteria
- Aggregates to meet NZTA requirements for M/4, M/6 and B/2
- Use of marginal and low quality aggregates

ON COMPLETION, PARTICIPANTS WILL HAVE THE KNOWLEDGE TO

- Understand factors affecting pavement construction relating to aggregates
- Determine influences on aggregate layers
- Learn methods of selecting pavement aggregates
- Determine quality of aggregate resources
- Understand quarrying processes
- Relate understandings to pavement construction techniques

WHO SHOULD ATTEND?

Design, construction and maintenance supervisors and engineers from local authorities, contracting organisations, laboratory technicians, consultants and road aggregate suppliers.

COURSE COST

\$495 per person + GST

(minimum numbers apply before a course is confirmed)

AGILE MANAGEMENT

2 DAYS

NEW
COURSE

PRESENTER Steven Briggs

The business environment is changing and the ability to deliver on time in full is vital. It's critical that good decisions are made as early as possible and that changes are communicated effectively.

Teams need to dynamically adjust to changing circumstances whilst maintaining quality and performance. Old style command and control simply can't cope in the new world. Increasingly organisations are adopting the agile approach.

This course explains the agile approach and how it can be applied to your workplace.

TOPICS

- Starting with why
- Agile principles
- Self-managing teams
- Servant leadership
- Visual management
- Effective conversations
- Performance reporting
- Improving learning

ON COMPLETION, PARTICIPANTS WILL HAVE LEARNED

- A simple approach to implementing agile
- How to engage the team
- How to manage workload
- How to manage change
- How to coach effectively
- How to make a realistic plan
- How to measure progress and track issues
- How to embed learning

WHO SHOULD ATTEND

This course will be of assistance to anyone working in a project or development environment where you have to prioritise work.

COURSE COST

\$995 per person + GST

(minimum numbers apply before a course is confirmed)



AN INTRODUCTION TO QUALITY MANAGEMENT

1 DAY

PRESENTER Bill Wright

Quality management is an important area of the civil contracting industry. NZ Transport Agency contracts are based around being able to show Quality Assurance in all areas of contracting.

This course outlines the requirements of the quality management in today's work place. Job quality is what you and your company is assessed on by its peers and by your client. This could be the reason why you get your next contract.

If you are already working in the tendering field or want to be successful in the Contracting industry, this course may help you understand some basic requirements.

This course will help you and your company demonstrate professional skills within the company, which is often a prerequisite for tendering on Government contracts.

TOPICS

- Develop management systems
- Evaluate improvements systems
- Maintain and control of material, plant and equipment
- Principle of operations management
- Design Methodologies
- Strategic vision and planning
- Staff participation
- Team leadership
- Understand the development and focus aspects of supplier/customer relationships
- Collect data for quality management
- Analyse data of quality management
- Understanding the audit process
- Understand how to use core quality management skills

ON COMPLETION, PARTICIPANTS WILL HAVE THE KNOWLEDGE TO

- Understand how to develop systems

Continued on next page...

- Understand how to evaluate systems
- Understand operation management
- Be able to maintain and control equipment
- Understand design methods for quality systems
- Understand team building techniques
- Be able to develop information plans for quality management

WHO SHOULD ATTEND?

Foreperson / Supervisors working in the civil engineering industry who are responsible for quality, or those wishing to develop Quality Management Systems.

COURSE COST

\$495 per person + GST

(minimum numbers apply before a course is confirmed)

APPLYING BITUMEN EMULSIONS AND POLYMER-MODIFIED BINDERS

1 DAY

PRESENTER Phillip Muir

Bitumen emulsions for chipsealing offer some significant advantages over hot bitumen cutbacks in terms of safety, total energy use, greenhouse gas emissions and reduced risk in damp and cool environments.

Polymer-modified binders (PMB's) extend the range of engineering materials available to contractors and designers to solve many of the practical road-surfacing problems that arise due to such things as cracked pavements, high surface stresses and wide temperature ranges.

However, the ways that these particular materials behave, both when applying them and in service on the road, are markedly different from conventional bitumen binders.

It is essential that those designing and constructing surfacings incorporating PMB's or emulsions, have a good understanding of the material properties and in particular the

limitations that these place on construction methodology and timing.

The course introduces the materials, looks briefly at manufacture and covers properties in detail with a strong emphasis on how this influences application techniques and on-the-road performance separately for emulsions and PMB's.

Guidelines are given to assist contractors to minimise the many risks associated with the use of these materials and show how to plan and successfully carry out this type of work. Effects on design are noted briefly.

TOPICS

- Manufacture, properties and how they work
- Storage, handling, sampling and testing
- Planning the work - special preparations
- Chipseal and SAMI construction considerations
- Effects on chipseal design
- PMB's in Hot Mix Asphalt
- Trouble-shooting
- Treatment selection and design considerations
- Advantages and limitations
- Recent advances in technology
- Adhesion and Cohesion, how they work

ON COMPLETION, PARTICIPANTS WILL HAVE THE KNOWLEDGE TO

- Understand basic bitumen emulsion behaviour and how to handle it properly
- Advise on when to use or when not to use emulsions or PMB's
- Understand the basic principles of polymer modification of bitumen binders and how to handle properly
- Understand the practical effects of PMB's in Hot Mix Asphalt
- Make appropriate adjustments in chipsealing techniques to successfully apply emulsions and PMB's
- Understand the need for appropriate chipseal design adjustments for emulsions and PMB's

WHO SHOULD ATTEND?

All those involved in the supervision or design of bitumen emulsion chipseals;

polymer-modified binder chipseals; stress-absorbing membrane interlayers; polymer-modified hot-mix asphalt mixes.

COURSE COST

\$495 per person + GST

(minimum numbers apply before a course is confirmed)

ASPHALT PAVEMENT CONSTRUCTION ESSENTIALS

1 DAY

Asphalt paving construction productivity depends on the smooth and safe running of laying operations and effective contractual relationships. It also depends on understanding the materials being dealt with. Poor construction practices often lead to defects, incorrect layer thickness and shape problems. The cost associated with rework and/or the repair of asphalt surfacing can wipe out the value of the work. Competent supervision can avoid many of these problems.

TOPICS

- On site safety importance of tailgates and risk analysis
- Special requirements of night work
- Materials used in paving
- Different mixes and overview of design
- Tack coat practice
- Assessing a site - should I even start?
- Liaison with plant and truckers and network of contributors to the job
- Correct estimation of amount of mix needed
- Quality by supervision and organisation
- Contract administration
- Site communication
- Programming sequences
- Paver operation, bob cat operation, rolling
- Field sampling and testing
- Traffic control, closures



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Auckland
Wellington
Christchurch

What is Included:
free internet connection - printed workbook & slides - morning tea - certificate of completion

\$50

DISCOUNT

CODE: NZIHTAN2611

- What does success look like – post examination of work

ON COMPLETION, PARTICIPANTS WILL HAVE THE KNOWLEDGE TO

- Apply knowledge of types of bitumen, aggregates, additives and design processes to construction of asphalt paving
- Supervise physical works involved in surface preparation and asphaltic paving construction
- Liaise with client, management, site staff and public during the project
- Check that specified mix and parameters are valid for conditions on site at time of application: Work with plant.
- Deploy personnel, plant and equipment in a productive manner and in compliance with contract requirements
- Make the company and industry look professional and responsible

WHO SHOULD ATTEND?

- New supervisors and junior engineers wishing to gain supervision skills in asphalt paving construction
- Experienced supervisors wishing to update their skills to present day requirements should also attend
- Laboratory personnel seeking to understand on site requirements
- Managers who want to know what goes on
- Asphalt plant personnel seeking to improve their performance

COURSE COST

\$520 per person + GST

(minimum numbers apply before a course is confirmed)

ASPHALT PRODUCTION ESSENTIALS

THE SAFE AND EFFICIENT OPERATION OF ASPHALT PLANTS

1 DAY

Asphalt hot mix is a more important part of the New Zealand construction industry. As plants become more automated and controlled the emphasis on operation is firmly on safety and quality. Different plants have different operation and control procedures but this course concentrates on the practicality of using the tools to make quality mix for clients that can be laid to a durable pavement surfacing or full depth asphalt construction.

Thorough product and plant knowledge, coupled with skilled maintenance and operational procedures is needed for the economical production of asphalt mixes from both fixed and mobile plants.

TOPICS

- Environment and safety principles
- Asphalt mix types and their characteristics and differences
- Asphalt production plants in NZ and their elements
- Aggregates storage and control of their quality
- Binder storage and control of their quality
- Interpretation of mix design – talking to the lab
- Design adjustments
- Pre-start checks/start up
- Silo storage and mix type
- Load out – what can go wrong?
- Sampling how to and what can go wrong – segregation
- RAP – how to handle it
- Keeping on top of outcomes
 - Quality Checks
 - Records
 - Field Test Results
 - Talking to Operations

ON COMPLETION, PARTICIPANTS WILL HAVE THE KNOWLEDGE TO

- Understand the components of an asphalt production plant
- Have an overview of basic mix design and of different plants and their operation
- Be aware of the physical properties of materials used in the manufacturing of asphalt
- Identify basic operating procedures and safety precautions
- Gain knowledge and understanding to adapt to operation and maintenance of plants to produce quality asphalt mixes
- Monitor plant operation and product to industry specifications
- Understand mix types and their needs
- Be able to minimize issues for laying
- Understand regulatory requirements for emissions, noise and dust.

WHO SHOULD ATTEND?

- Plant operators and personnel involved in the manufacture of asphaltic concrete production.
- Laboratory personnel to improve knowledge of plant
- Laying personnel to understand limitations on mixes and importance of their operations

It is recommended that attendees should also attend the NZIHT 'Bitumen – Basic Safety' course.

COURSE COST

\$520 per person + GST

(minimum numbers apply before a course is confirmed)

BITUMEN – BASIC SAFETY

INCLUDES HANDS-ON FIRE EXTINGUISHER TRAINING

1 DAY

PRESENTER Barry Gundersen

It is absolutely essential that all those involved in any way with bituminous materials fully understand the significant hazards presented and the procedures used to ensure safety.

This is a required awareness course for all personnel in the road surfacing industry and is presented with the aid of graphic practical demonstrations.

This popular course has practical 'hands-on' fire extinguisher training. Every person on the course gets to practice putting out a fire with an extinguisher.

It is a pre-requisite for other advanced courses for those handling, operating, maintaining or working near bitumen equipment or supervising the use of bituminous materials.

This course will assist with compliance with individual and company Health and Safety responsibilities.

TOPICS

- Introduction to bituminous materials including emulsions
- Health hazards, personal precautions
- Hazards when working around bitumen plants and hot-mix plants
- Hazards associated with field operations
- Importance of appropriate training
- Dangers of water
- First aid for bitumen burns and chemical burns
- Dangerous goods, flash point, auto-ignition, safe distance
- Explosion hazards, empty tank hazards
- Maintenance hazards, spillage precautions
- Fire safety including 'hands on' experience in the use of portable fire extinguishers to fight flammable liquid fires
- Miscellaneous associated hazards encountered in the road surfacing industry

ON COMPLETION, PARTICIPANTS WILL HAVE THE KNOWLEDGE TO

- Identify basic hazards associated with bitumen and hotmix road surfacing
- Identify specific hazards and safety procedures associated with the handling, blending, transportation and spraying of bitumen
- Recognise hazards involved in the maintenance and repair of bitumen equipment
- Know procedures for fire-fighting with extinguishers

Continued on next page...

WHO SHOULD ATTEND?

All personnel involved in any way with road surfacing, especially those working anywhere in contractor's depots, chipsealing and asphalt paving workers, as well as those managing or supervising road surfacing operations including local authority and consulting engineering personnel.

A separate course named "Bitumen – Managing the Risk" is designed for contractor managers and supervisors. This course covers due diligence management aspects of the above issues.

COURSE COST

\$520 per person + GST

(minimum numbers apply before a course is confirmed)

BITUMEN – MANAGING THE RISK 1 DAY

PRESENTER Barry Gundersen

This is an essential risk awareness course targeted at managers, engineers and supervisors involved in managing businesses or operations that include the storage, transport and production of bituminous materials; and road surfacing works. A separate course "Bitumen – Basic Safety" is intended for all others involved in the road surfacing industry.

It is absolutely essential that all those involved in managing or supervising bituminous operations or businesses, fully understand the significant hazards presented by the materials, related plant and equipment, the legislative requirements imposed and the due diligence procedures required to adequately manage the many risks involved.

This one day course is designed to help managers comply with Health and Safety responsibilities.

WHAT IS THE DIFFERENCE BETWEEN 'BITUMEN – BASIC SAFETY' AND 'BITUMEN – MANAGING THE RISK'?

The "Bitumen – Managing the Risk" course differs from the "Bitumen – Basic Safety" course, in that it is aimed specifically at managers and looks at the management and due diligence issues associated with bitumen related risks.

TOPICS

- The RNZ Code of Practice 9904
- Health and safety – summary of risks
- Safety legislation – personal responsibility of managers
- Importance of appropriate training
- Hazards of bitumen plants and hot-mix plants
- Hazards associated with field operations
- Dangers of water

- Managing bitumen burns and chemical burns incidents
- Dangerous goods regulations – management responsibilities
- Explosion hazards, empty tank hazards
- Plant maintenance hazards, spillage precautions
- Managing fire risk
- Miscellaneous associated hazards encountered in the road surfacing industry

ON COMPLETION, PARTICIPANTS WILL HAVE THE KNOWLEDGE TO

- Identify basic hazards associated with bitumen and hotmix asphalt activities and understand what "due diligence" means with respect to managing these hazards
- Identify specific hazards and safety procedures associated with the handling, blending, transportation and spraying of bitumen and the production and laying of hot-mix asphalt
- Recognise hazards involved in the maintenance and repair of bitumen equipment – especially tanks and tankers.
- Understand principles of fire-fighting with extinguishers
- Understand the principles of managing a bitumen burns incident and the first aid treatment for bitumen burns and chemical burns.

WHO SHOULD ATTEND?

All senior management, middle management and supervisory personnel whose responsibilities are related to bitumen, hot mix, bitumen equipment or any related activities.

COURSE COST

\$520 per person + GST

(minimum numbers apply before a course is confirmed)

BITUMEN PLANT AND TANKER OPERATOR 1 DAY

PRESENTER Barry Gundersen

The operation of bitumen tankers, sprayers and bitumen storage and blending plants demands a basic knowledge of the properties of bitumen and associated products and adherence to strict safety procedures.

Production is improved if operators have the appropriate advanced knowledge and skill to accurately and safely use plant and equipment.

Quality is maintained by bitumen product knowledge, adherence to handling procedures, accurate blend calculation and careful record keeping.

Attendance at the "Bitumen – Basic Safety" course within the last five years is a pre-requisite for this course.

This course "follows on" from the "Bitumen – Basic Safety" course and is a pre-requisite for the "Bitumen Sprayer Operator" course.

TOPICS

- Bitumen, additives, polymers, emulsions
- Safe operation of fixed plant
- Code of Practice for the Safe Handling of Bituminous Materials used in Roothing
- Loading, blending, heating and transferring
- Transfer hose safety and compliance
- Plant maintenance
- Storage and transportation
- Dangerous goods classification and labelling
- Measurement and control
- Safe tanker operation
- Sampling and documentation
- Calculation of blends
- Record keeping
- Plant maintenance safety

ON COMPLETION, PARTICIPANTS WILL HAVE THE KNOWLEDGE TO

- Understand the nature of bitumen products and safe operating procedures
- Understand plant for handling and transporting bitumen safely
- Understand ancillary plant functions, capacities and capabilities
- Identify plant safety and on-road responsibilities when using bitumen
- Understand blend calculations, measurements and documentation
- Safely undertake bitumen sampling
- Understand risks associated with plant maintenance.

WHO SHOULD ATTEND?

Persons who have completed their training for bitumen safety awareness and who wish to acquire specialist knowledge for operating bitumen plants and road tankers. Also, experienced operators, who wish to update their skills and/or qualifications, will find this course appropriate.

PRE-REQUISITE FOR ATTENDANCE

- Participants **must** have completed the *Bitumen – Basic Safety* course (within the last five years) prior to attending this course.

COURSE COST

\$520 per person + GST

OR

\$795 per person + GST to attend two consecutive days (ie: Bitumen Plant and Tanker Operator followed by the Bitumen Sprayer Operator course)

(minimum numbers apply before a course is confirmed)

BITUMEN RHEOLOGY & PERFORMANCE

1 DAY

Bitumen is the primary sealing material used in New Zealand roads which comes in various grades and may be modified with polymers or other materials. Before 2016 bitumen was graded according to empirical consistency measures with no reference to traffic, shear or climate. Modified Binders too have been classified by empirical tests.

The volumes of traffic in New Zealand are increasing all of the time, and this combined with the heavier trucks on our roads means that we need to ensure the effectiveness and longevity of the bitumen and PMBs we use every day.

In the 1990s the USA introduced performance bitumen - PG grades, and now New Zealand has also moved in this direction. This specification recognizes that the rheological properties of binders are key to its performance in either asphalt or sealing.

It is essential that those designing and constructing surfacing and structural asphalt layers have a good understanding of the material rheological properties to select the correct binder and design the final product and handle it correctly.

This course introduces the concepts of rheology and shows how they relate to performance in asphalt and seals. This is related to the design of asphalt and selection of sealing grades. The new asphalt specification is discussed and how the testing is done, reported and controlled.

TOPICS

- Crude oil and processing - how the refinery works and how this affects performance
- Basic bitumen chemistry
- Basic bitumen rheology: first, second and third generation specifications
- MSCR - high and low temperature properties
- NZTA M1/A
 - Why
 - How
 - What
- Relationship to asphalt design and application M/10 2014
- Binder selection
- PMB - how PMBs are specified in M/1A
- Sealing performance grades of the future, how rheology affects seal performance

ON COMPLETION, PARTICIPANTS WILL HAVE THE KNOWLEDGE TO

- Understand basic bitumen production and the effect of crudes and processing
- Understand the basic principles binder rheology and how its measured
- Understand M/1A asphalt Performance grades
- Have knowledge of the seal binder directions for performance

- Understand the practical effects of PMB's in Hot Mix Asphalt and Sealing based on rheology.

WHO SHOULD ATTEND?

Laboratory personnel, field supervisors, consultants, asphalt plant supervisors and management.

COURSE COST

\$520 per person + GST

(minimum numbers apply before a course is confirmed)

BITUMEN SPRAYER OPERATOR

1 DAY

PRESENTER Barry Gundersen

Precise and competent operation of the bitumen sprayer is essential to successful chipsealing operations. Sprayer performance is improved if operators have detailed knowledge of the principles of the chipsealing process and the appropriate knowledge to accurately use the equipment.

Output quality is enhanced by bitumen product knowledge, adherence to safe handling procedures and careful record keeping.

PRE-REQUISITE FOR ATTENDANCE

- Participants **must** have completed the *Bitumen-Basic Safety* course (within the last five years) prior to attending this course.
- Participants **must** have completed the *Bitumen Plant and Tanker Operator* course prior to attending this course.

TOPICS

- Bitumen products for chipsealing
- Chipseal types and basic design principles
- Storage, blending and transportation
- Sampling and documentation
- Sprayer types, pumps & operating systems
- Troubleshooting
- Spray charts
- Correct spraybar set-up
- Hand-spraying
- Sprayer maintenance
- Operational safety
- RNZ E/2 industry certification of sprayers
- Field measurement and control
- Calculation of hot spray rates for cutbacks and emulsions
- Spraying Hot PMB's
- Bitumen sprayer record keeping

ON COMPLETION, PARTICIPANTS WILL HAVE THE KNOWLEDGE TO

- Understand the nature of bitumen products and handling procedures
- Understand sprayer principles
- Understand ancillary plant functions, capacities and capabilities
- Identify plant safety and on-road responsibilities when spraying bitumen

- Understand the correct operation of bitumen sprayer plant
- Calculate hot spray rate from design residual application rate
- Calculate required binder quantity
- Complete field measurements
- Maintain accurate documentation

WHO SHOULD ATTEND?

Persons with limited knowledge of sprayer operation. Also experienced operators who wish to update their skills and/or qualifications, will find this course appropriate.

COURSE COST

\$520 per person + GST

OR

\$795 per person + GST to attend two consecutive days (ie: Bitumen Plant and Tanker Operator followed by the Bitumen Sprayer Operator course)

(minimum numbers apply before a course is confirmed)

BRIDGE INSPECTION AND MAINTENANCE PROCEDURES

2 DAYS

PRESENTER Dave Charters

Bridges are valuable assets, which must be maintained and managed if they are to remain functional at optimal costs through their design life.

Defects do occur which require attention during the life of a bridge. Some bridge components have a design life less than that of the bridge and require periodic replacement. Natural events such as floods and earthquakes cause damage. The bridge corrosion environment can affect durability and must be recognised. These areas must be addressed and appropriate maintenance carried out to ensure continued public safety as well as to maintain the asset and minimise repair costs.

Whilst this course does include a module on the inspection process, this is not considered in detail. Completion of this course does not certify delegates to inspect NZTA bridges. The NZIHT sister course, "Bridge and Other Significant Highway Structures Inspection", is required.

TOPICS

- Asset management systems
- The inspection procedure
- Condition assessment for common bridge materials
- Repair procedures
- Coatings for steel structures
- Economic evaluation
- Durability and maintenance of bridging materials

Continued on next page...

- Maintenance requirements
- Waterway, drainage and seismic damage

ON COMPLETION, PARTICIPANTS WILL HAVE THE KNOWLEDGE TO

- Identify the principles of bridge inspection and maintenance
- Carry out bridge inspections under supervision
- Understand the importance of the corrosion environment local to structures
- Gain an understanding of administration and management systems
- Follow NZ Transport Agency policy to inspect and evaluate bridge conditions and detect faults
- Prepare repair procedures under supervision
- Effectively prioritise maintenance requirements
- Detect potential instances of bridge failure

COURSE COST

\$795 per person + GST

(minimum numbers apply before a course is confirmed)

BRIDGE AND OTHER SIGNIFICANT HIGHWAY STRUCTURES INSPECTION

2 DAYS

PRESENTER Dave Charters

Bridges and Other Significant Highway Structures are critical components of the New Zealand Road Network. Failure to inspect and identify any defects correctly could potentially result in dramatic damage and/or loss of life.

This is a **new NZTA endorsed and certified** course designed to ensure the correct requirements are met for the inspection of bridges and other significant highway structures. The course will cover in depth the requirements outlined in NZTA policy Document S6 'Bridges and Other Significant Highway Structures Inspection Policy'. This course is assessed on day two and will qualify the successful candidates to undertake bridge inspections specifically for NZTA but also other Road Controlling Authorities.

NZTA requires compliance with this training by 1 January 2018.

The focus of this course is firmly on the inspection process and the identification of defects. Successful completion of the assessment component on the second day will enable inspectors to carry out General Inspections on NZTA bridges. Treatment of defects is dealt with in the NZIHT sister course, "Bridge Inspection and Maintenance Procedures".

COURSE CONTENT INCLUDES – DAY ONE

- Course Introduction. Purpose of inspection. Definition of Structures.
- Inspection policy – NZTA S6 2015.
- The role of the different parties, Inspector and Bridge Inspection Engineer.
- Types of inspection. Focus on General and Principal Inspections. Responsibility for Structure Inspection.
- Routine Surveillance Inspections.
- Special Inspections.
- Effect of environment – intervention guidelines.
- Planning the inspection round.
- The inspection form – standard form from NZTA S6.
- Importance of recognising when more detailed study is required.
- Equipment. Camera, ladder, calipers, steel rule etc.
- Procedure for drilling timber structures to identify concealed decay.
- Optimising the inspection process – adding value. Spotting loading plaques and recording.
- Reporting and Records overview.
- Safety.
- Systematic Approach of the Inspection procedures.
- Elements, Causes of Deterioration and Identification and Logging of defects in reinforced concrete.
- Problem with and Identification and logging of defects in steel structures.
- Problems with timber structures.
- Hardware. Joints, bearings, holding down bolts, seismic restraints, service supports. Typical problems and logging of defects.
- Approaches, Foundations and Waterways – typical problems and logging defects.
- Specialist inspections/advice for particular structure types such as steel structures.

COURSE CONTENT INCLUDES – DAY TWO

Morning

INSPECTION – Structures of different types will be inspected as a group along with utilising the latest inspection results from the NZTA Regional Bridge Consultant.

Afternoon

ASSESSMENT – Each delegate will inspect a structure and be assessed on an individual basis. Attendees will be split up to provide integrity of assessment.

ON COMPLETION, PARTICIPANTS WILL HAVE THE KNOWLEDGE TO

- Understand the principles of bridge and other highway structure inspection.
- Carry out bridge and highway structure inspections under supervision.
- Gain an understanding of administration and management systems.
- Follow NZ Transport Agency Policy to inspect structures and identify defects.
- Detect potential instances of bridge failure.

- Identify where more detailed or specialist inspection or technical advice is required.

WHO SHOULD ATTEND?

- Engineers and inspectors with responsibility for inspecting and determining maintenance requirements for both State Highway and Local Authority bridging.
- New and experienced bridge inspectors, engineers, technical staff and asset managers wishing to upgrade their knowledge.

All attendees need to be familiar with NZTA S6 and bridge inspection terminology prior to attending this course.

PARTICIPANTS TO BRING

Hi-vis clothing, safety boots, wet weather gear, clipboard.

COURSE COST

\$1,200 + GST

(Maximum number of attendees for this course is 12)

Attendees will receive a copy of the Inspection Manual for Highway Structures – Inspectors Handbook and a Crack Gauge to keep after the course.

CHIPSEAL DESIGN

2 DAYS

PRESENTER Barry Gundersen

Factors affecting the design and the field performance of chipseal surfacings are complex. Local conditions can significantly influence the way a seal is designed to get the best performance.

Prior detailed knowledge of chipsealing materials is an essential requirement for this course. A preparatory course "Chipseal Materials" is available.

The treatment selection and design procedures from the textbook "Chipsealing in New Zealand" provide the basis for this course and a range of worked examples are included.

A problem-solving session in syndicate workgroups also aids understanding. In addition, the practical application of the NZTA P/17 performance-based specification will be covered in detail, including worked examples.

TOPICS

- Understanding the stresses
- Skid resistance basics
- Assessing chipsealing needs
- Pre-seal treatments
- Materials summary
- Importance of addressing adhesion issues
- Design processes and options
- Worked design exercises
- Plant used in chipsealing construction
- Construction of chipseal and reseals
- Analysis of faults, failures and fixes

- Quality assurance
- Contractual responsibilities and procedures for P/17
- Determination of acceptance criteria for P/17
- Acceptance testing and payment for P/17
- Worked P/17 examples

ON COMPLETION, PARTICIPANTS WILL HAVE THE KNOWLEDGE TO

- Assess chipsealing needs
- Understand design steps required
- Determine pre-treatments required
- Determine appropriate surfacing treatments and binder rates
- Calculate hot binder spray rates and chip application rates
- Identify essential spray preparation, spraying control, traffic control and compaction checks to ensure quality of seal
- Select plant for production requirements and job type
- Understand the contractual framework for P/17 contracts
- Determine P/17 acceptance criteria
- Carry out acceptance measurements and apply acceptance criteria to completed chipseals.

WHO SHOULD ATTEND?

- People with limited knowledge of chipseal design and experienced practitioners wishing to update their skills in line with the approach in the "Chipsealing in New Zealand" textbook and in the application of the NZTA P/17 specification.
- Personnel from Local Authorities, contractors and consultants will find this course particularly useful.

ENTRY RECOMMENDATIONS

- To fully understand and successfully complete this course, attendees must already have a sound knowledge of the nature and priorities of road surfacing component materials. Participants can gain this essential knowledge by first attending the NZIHT preparatory course "Chipseal Materials", as knowledge of this subject matter will be assumed.
- It is recommended that attendees should attend or have completed the "Bitumen-Basic Safety" course within the last five years.
- For maximum benefit it is recommended that participants have the mathematical ability of at least NCEA Level 1

PARTICIPANTS TO BRING TO COURSE

It is recommended that participants have access to a copy of the "Chipsealing in New Zealand" Text Book released by the NZ Transport Agency in 2006.

This book is now out of print, but a full copy is available on the NZ Transport Agency website: www.nzta.govt.nz

(Choose 'Resources & Manuals' and then 'Manuals'. Scroll down until you see Chipsealing in NZ.)

COURSE COST

\$795 per person + GST

OR

\$995 per person + GST to attend two and a half consecutive days (ie: Chipseal Materials followed by the Chipseal Design course)

(minimum numbers apply before a course is confirmed)

CHIPSEAL MATERIALS

AN ESSENTIAL INTRODUCTION FOR DESIGNERS

1/2 DAY

PRESENTER Barry Gundersen

This course provides an introduction to the materials used in chipseals and asphalt in NZ and is intended for those who have not previously had formal detailed training in this subject from other courses such as an appropriate degree or diploma.

It is essential knowledge for those wishing to attend the NZIHT Chipseal Design course. It is intended to give a good understanding of the properties, specifications and performance of the component materials - bituminous binders, binder additives and mineral aggregates. Knowledge of the subject matter in this course is essential for those wishing to gain chipseal design skills.

TOPICS

- Bitumen production, NZTA M1 specification
- Bitumen specification developments
- Penetration, viscosity, flash point, durability
- Pumping, mixing and spraying temperatures
- Additives - cutters, fluxes, adhesion agents, antifoam
- Additives - polymers, natural rubber, fibres
- Water stripping, active adhesion, vialit test
- Aggregate pre-coating, primers (bitumen and emulsion)
- Bitumen emulsions, classification, on-road behaviour
- Production of sealing chip
- Source tests for rock for sealing chip
- NZTA M6 specification properties and tests
- ALD chip shape concepts in detail, and sieve analysis/grading
- Sampling aggregates
- Application of chip

ON COMPLETION, PARTICIPANTS WILL HAVE THE KNOWLEDGE TO

- Understand the basic properties of binders and aggregates for chipseals

- Understand the requirements of NZTA M1, M6 and M10 specifications
- Understand the tests used for road surfacing materials and how to interpret test results
- Understand how the material properties of binders and aggregates effect on-road performance

WHO SHOULD ATTEND?

All those, whether contractor or client, who supervise chipseal and hotmix asphalt construction. Those who are involved in chipseal design and asphalt mix design.

COURSE COST

\$395 per person + GST

or

\$995 per person + GST

to attend two and a half consecutive days (ie. Chipseal Materials followed by the Chipseal Design course)

COMPACTION – OPERATOR KNOWLEDGE

NEW COURSE

1/2 DAY

PRESENTER Stu Moulding (Civiltrain)

This interactive classroom based course is now seen as a benchmark course in the industry and is often referred to simply as 'the compaction course'.

This course is more than what it seems. There is no waffle - just good sensible training. With decent information on materials (and how to fix up bad materials), compaction gear, gear selection, knowing when to stop, plus a good swag of tricks of the trade to make life easier for your field staff. This course will deliver very positive results for your staff.

We constantly hear that after attending this course, field staff have a better appreciation of what it is they are trying to achieve, how best to achieve it, communicating what they are doing with both the public and engineers, and most importantly, reduced remedials.

TOPICS

- What compaction is
- Sources and types of compaction
- Granular materials (river-run and pit-run)
- Cohesive materials (clay and silt)
- Important field tests to ensure best practice
- Problems with clay and silt soils and how to fix
- The importance of OWC in the field
- The importance of layer thickness in construction
- How compaction happens (both primary and secondary)
- 12 types of compaction equipment from plates to dynamic!

ON COMPLETION, PARTICIPANTS WILL HAVE THE KNOWLEDGE TO

- Apply relevant new skills to improve efficiency and the final product.

WHO SHOULD ATTEND?

- Anyone involved in civil construction from 'green' labourer, right through to experienced engineers. Everyone gets something useful from this course.

COURSE COST

\$395 per person + GST

(minimum numbers apply before a course is confirmed)

COMPACTION ADVANCED KNOWLEDGE

½ DAY



PRESENTER Stu Moulding (Civiltrain)

This interactive classroom based course is a considerable leap above the Compaction - Operator Knowledge course. This is aimed at technical staff such as contracts engineers, graduate engineers etc.

The aim of this course is to give the candidate confidence, especially when engaging with other technical staff. We have an in-depth look at materials and their properties, lab and field testing (and in particular, what the numbers mean, and how best to interpret them), soil mechanics, and how to apply all of this to a typical roading contract.

TOPICS

- What compaction is and the consequences of poor compaction
- Materials used in NZ
- NZ geology and its impact on construction materials
- Soil mechanics including density (OMC/MDD), solid density, air voids, CBR and shear strength
- Material testing in NZ and its implications for the contractor
- Field testing and on-site QA
- Typical NZ roading contract (NZTA B/2)
- Four types of commonly used field gear (Scala Penetrometer, Clegg Hammer, NDM and Shear Vane)



ON COMPLETION, PARTICIPANTS WILL HAVE THE KNOWLEDGE TO

At the end of this course candidates will have a well-rounded understanding of construction materials, laboratory testing and its implications, and typical NZ field testing.

WHO SHOULD ATTEND?

New and experienced engineers, technical staff, laboratory staff, plus anyone wanting to further their knowledge of the wider civil industry.

COURSE COST

\$395 per person + GST

(minimum numbers apply before a course is confirmed)

COMPETENT PIPELINE REHABILITATION

1 DAY

PRESENTER Bill Wright

Lining of ruptured underground drains and ducts provides a cost effective, less disruptive method for rehabilitation of the service.

This course will provide an insight into the range of drains and service ducts that may be suitable for rehabilitation by relining.

We will also be covering surveying, cleaning and assessment of failed drains and ducts, selection of rehabilitation methods and materials. Key safety aspects of materials use and installation.

TOPICS

Drains and Ducts

- PVC
- Polyethylene
- Earthenware
- Concrete
- Brick
- Iron

Surveying and Cleaning

- CCTV
- As-Built Plans
- Hydro-jetting
- Safe confined space entry

Lining of Pipes and Ducts

- Correct selection of liner
- Correct selection of adhesive
- Safe use of adhesives
- Methods of inserting liners
- Bridging of voids
- Reinstatement of connections
- Commissioning of new lined drains and ducts

ON COMPLETION, PARTICIPANTS WILL HAVE THE KNOWLEDGE TO

- Assess the suitability of drains and ducts for liner rehabilitation

- Safely install a variety of liner types using the appropriate adhesive
- Know the options available for reinstating service connections
- Know how to commission new lined drains and ducts

WHO SHOULD ATTEND?

- Persons working in drainage and duct maintenance
- Drainage engineers and specifiers
- Network services contractors, engineers and specifiers

COURSE COST

\$495 per person + GST

(minimum numbers apply before a course is confirmed)

CONFLICT MANAGEMENT SKILLS

2 DAYS

PRESENTER Fiona Knight

The more people have to depend on each other to achieve results under pressure, the greater the chance of conflict.

Given the complex working relationships in and between organisations today, there is ample opportunity for conflicts, big and small, to arise. Conflicts can show up as minor disagreements or heated debates. However they present themselves, if you mishandle conflict situations, you can damage work relationships, reduce your personal energy and focus and cause productivity to plummet.

People and organisations can greatly benefit from learning to handle conflicts skillfully and confidently.

This course will help you improve productivity and engagement. It will result in better collaboration and trust throughout teams, clients, contractors and the wider organisation.

Gain effective skills to support better communications, projects and improve your working relationships.

MAJOR POINTS COVERED ARE

Communication skills

- Attitude and self-awareness
- Barriers to communications
- Listening skills
- Questioning techniques
- Giving and receiving feedback
- Personal work styles

Leadership and Team-Building

- Team dynamics
- Team building
- Management vs leadership
- Leadership characteristics
- Pitfalls to avoid
- Delegation skills

Conflict management

- What is conflict?
- Conflict resolution skills
- The drama triangle
- Conflict resolution styles

Stress and Anger Management

WHO SHOULD ATTEND?

Engineers, contractors, supervisors, team leaders, managers, aspiring leaders. Any person who wants to improve their personal effectiveness as a manager and communicate better, with less interpersonal conflict.

COURSE COST

\$795 per person + GST

(minimum numbers apply before a course is confirmed)

CONSTRUCTION AND MAINTENANCE OF ROAD DRAINAGE SYSTEMS

1 DAY

PRESENTER Bill Wright

Competent supervision skills are essential in producing a final product that meets all design and specification requirements. High levels of productivity can be achieved through the effective and efficient use construction techniques, gained through a combination of knowledge, good planning and organisation skills which best utilises the resources available to the supervisor.

The drainage construction supervisor is responsible for the proper setting out, excavation, pipe laying and back filling of drainage trenches. Suitable compaction techniques are important if rework associated with settlement is to be avoided.

The supervisor should have a good knowledge of various types of pipes, jointing systems and a good knowledge of materials suitable for both bedding and backfilling.

The course attempts to highlight the aspects of construction that will have a significant effect on the quality of the finished product. In addition, Health and Safety issues are addressed as appropriate.

TOPICS

- Initial setting out and survey
- Planning
- Levels and site rails
- Gradients
- Bedding and pipe laying
- Backfill
- Quantities
- Quality and safety
- Delays due to breakdown, adverse

weather, project changes and unforeseen physical conditions

- Testing of pipework
- Allocating tasks to the work team

ON COMPLETION, PARTICIPANTS WILL HAVE THE KNOWLEDGE TO

- Describe factors in road drainage system design
- Identify safety requirements of trench shoring
- Describe the construction of road stormwater systems
- Describe the construction of subsoil drainage systems
- Describe the drainage system structures and their connections
- Describe road drainage system maintenance and repair
- Demonstrate knowledge of subsoil drainage systems
- Describe piped culvert drainage systems

WHO SHOULD ATTEND?

This course is targeting beginner/intermediate people involved in the construction of drainage and stormwater systems - representing either the contractor or the client. It will suit those wishing to gain some knowledge and understanding of drainage, eg. engineers, project managers, quantity surveyors, etc...

COURSE COST

\$495 per person + GST

(minimum numbers apply before a course is confirmed)

CREATING A HEALTH AND SAFETY CULTURE

1 DAY

PRESENTER Fiona Knight

Do you, your colleagues and your staff have a health and safety culture?

Many of us take risks in our sports, our driving, our holidays and hobbies, and our DIY projects. Our accident statistics prove that. Do we always think through the potential consequences of our actions? How can we make THINK SAFETY a matter of course?

Many people complain: "It's not based on common sense, so how can we apply it?" Do you know what your health and safety responsibilities are? The Health and Safety legislation puts responsibility for managing risks and potentially hazardous situations on people at all levels in workplaces, from the Board Chair to the cleaner.

This course has two parts: understanding the legislation; and how to put it in place by growing a culture of protecting health and safety of workers at all levels. It addresses

getting people to change their attitudes as well as their actions, and doing what's not always comfortable.

MAJOR POINTS COVERED ARE

- What the law says about health and safety
 - The Health and Safety in Employment Act 1992
 - The new Health and Safety Reform Bill
- The chain of responsibility from top to bottom of an organisation - and personal accountabilities
- Barriers to a safety culture
- Risk assessment and management
- Changing attitudes to health and safety
- How to ensure compliance with the new culture
- Development of a personal action plan

ON COMPLETION, PARTICIPANTS WILL HAVE THE KNOWLEDGE TO

- Understand the legislation and everyone's roles and responsibilities
- Understand and implement policies and procedures that will ensure compliance with the legislation
- Monitor company policies and procedures to ensure compliance with the legislation
- Change your own and your organisation's health and safety culture
- "Walk the talk" - show how you implement health and safety at work

WHO SHOULD ATTEND?

This course has been designed for any-one and every-one. We all have responsibilities for implementing health and safety and this course is designed to help you get your colleagues and staff thinking safety.

COURSE COST

\$495 per person + GST

(minimum numbers apply before a course is confirmed)

EFFECTIVE LEADERSHIP

2 DAYS

PRESENTER Steven Briggs

The most common reason employees give for leaving their job is their leader / manager. Failing to inspire or engage with the team results in poor performance and all the issues that generate as a result. There is a whole industry of companies offering to measure the effectiveness of leaders and the engagement of teams. There are also a great number of theories on what makes a great leader. The challenge for the individual is where to go and who to believe - what is the best way forward for them?

We've distilled the latest ideas down into a series of practical steps that anyone can take to improve their leadership skills and become more effective at leading their teams. We use DiSC as a self-discovery tool to help you with the process.

This course will help you learn how to lead yourself and your team, focus on the important things and develop strategies for dealing with everyday events. We appreciate the time pressure that everyone works under and so we give insights into effective processes that will yield results quickly, rather than theories that are difficult to put into practice.

ON COMPLETION, PARTICIPANTS WILL HAVE THE KNOWLEDGE TO

- Understand your own strengths and weaknesses
- Understand how to effectively lead a change
- Understand how to develop and communicate your vision / objectives
- Understand how to build and motivate your team
- Be able to help your team become more productive and work more effectively
- Understand the importance of listening, being assertive and giving quality feedback
- Learn how to generate new ideas
- Learn how to ensure results are delivered
- Understand how to develop your team

COURSE STRUCTURE

The course is highly interactive with a range of exercises, games, role plays and practice sessions so that participants learn by doing, rather than through formal teaching methods.

COURSE COST

\$995 per person + GST

(minimum numbers apply before a course is confirmed)

ENVIRONMENTAL RISKS OF CONSTRUCTION

PREPARING YOU WITH ON-SITE ESSENTIALS

1 DAY

PRESENTER 4sight Consulting - Emma Comrie-Thomson

Do you know the environmental risks and obligations of construction projects?

This course provides participants with a practical understanding of the environmental aspects of civil construction.

Providing you the know-how to understand your legal obligations, raise environmental awareness and find workable solutions too many of the common risks on construction sites.

The course is designed for anyone involved in the construction industry, including contractors, project managers, regulators and consultants.

TOPICS

- Unique characteristics of civil contracting context
- How the RMA works
- Common duties, rules and liabilities
- Impacts of rules and resource consents on daily activities
- Potential effects of common activities and minimum industry standards for their management including:
 - erosion and sediment control principles and key controls
 - stormwater catchpit protection
 - noise, vibration, odour and dust
 - basic hazardous substance rules for chemical and fuel storage
 - prevention and management of spills
 - works around watercourses
 - works around trees
 - pH effects of concrete, cement and lime work
 - asphalt cutting
 - dewatering
 - waste minimisation and disposal
 - resource efficiency
 - basic archaeological site discovery protocol
 - basic contaminated site discovery protocol
 - basic clean fill protocol
- Selected environmental management system procedures such as tracking compliance - why and how
- Practice identifying potential risks and solutions associated with common activities
- Real examples from projects and legal cases
- Emphasis on relevant regional issues

ON COMPLETION, PARTICIPANTS WILL HAVE THE KNOWLEDGE TO

- Demonstrate an understanding of the principles, common control measures and risk assessment required to protect the environment at a civil construction works site
- Plan for and manage environmental risks associated with a project
- Demonstrate knowledge of environmental legislation relevant to an infrastructure works site
- Explain typical resource consents and permits required for an infrastructure works site
- Explain the consequences of non-compliance, non-compliance reporting, and enforcement powers and notices relevant to an infrastructure works site
- Describe and communicate environmental incidents and the impacts on the employee and to an infrastructure works site
- Describe the types of contaminant discharges, the impacts of discharges, and contamination mitigation measures on an infrastructure works site
- Demonstrate knowledge of environmental controls and work practices, maintenance

schedules, and auditing and communication procedures of sediment control and maintenance schedules in an infrastructure works site

This is consistent with Unit Standard 27202.

COURSE STRUCTURE

This course is essential for decision-makers associated with civil construction sites who have legal, contractual and/or practical responsibilities for project environmental performance.

COURSE COST

\$595 per person + GST

(minimum numbers apply before a course is confirmed)

GEOMECHANICS FOR NEW ZEALAND ROADING

1 DAY

PRESENTER Ian Anderson

This course draws together the necessary soil investigation and geotechnical procedures for roading construction and maintenance. The course provides an up-to-date overview of investigative techniques and analysis.

TOPICS

- Geotechnical engineering and pavement design
- Fundamental soil properties
- Compaction
- Planning geomechanical investigations
- In-situ investigation and testing
- Laboratory testing issues
- Effects and control of water movement
- Soil strength improvement
- Bearing capacity

ON COMPLETION, PARTICIPANTS WILL HAVE THE KNOWLEDGE TO

- Understand the role of engineering judgement to obtain effective solutions to soils and subgrade problems
- Identify fundamental properties of soils
- Plan a geotechnical investigation
- Apply geotechnical investigations to improve pavement construction
- Utilise pavement stabilisation techniques

WHO SHOULD ATTEND?

Engineers, technicians, supervisors and Local Authority staff involved in pavement design and construction.

COURSE COST

\$450 per person + GST

(minimum numbers apply before a course is confirmed)

GEOMETRIC DESIGN FOR ROADS

2 DAYS

PRESENTER Quintin Dettling

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 2016 Austroads guidelines.

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 – AUSTRROADS 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

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, PARTICIPANTS WILL HAVE THE KNOWLEDGE TO

- 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

COURSE COST

\$795 per person + GST

(minimum numbers apply before a course is confirmed)

IDENTIFY, LOCATE AND PROTECT SERVICES

1 DAY

PRESENTER Laurie Brown

Civil construction sites are inherently dangerous places of work. Where excavations are present or where the work requires ground penetration, particularly by metal pegs, rods, stakes and the like, there is an immediate opportunity for potential conflict with existing utility services located underground.

These conflicts have caused many seriously harmful and fatal accidents to workers, resulting in criminal prosecutions and financial penalties imposed by the courts on individual workers, employers and principals. The resulting disruption to services continues to cause considerable inconvenience and costs to affected service users such as ratepayers, commercial enterprises, hospital and emergency facilities.

This course incorporates the new OSH guide for Safety with Underground Services. In addition, this course offers a systematic approach to location, identification and protection of underground utility services.

TOPICS

- Ring before you dig
- Permits and approval to dig
- Work instruction
- How to dig (hand dig only)
- Safe operating procedures (OSH and DOL requirements)
- Service plans and locators
- Hazards Safe working zones
- Trees scheduled and significant
- As built plans
- Reinstatement

TARGET OUTCOMES

To be able to safely locate, identify and protect all services where excavation is to take place, including scheduled trees and reinstatement.

- No loss of services to the consumer
- No damage of underground (or overhead) utility services
- No damage to property of the asset owner
- No harm to people, workforce or public
- No contract delays and associated costs due to disruptions to utility services

- No increases in insurance premiums due to claims made for damage to underground utility services

WHO SHOULD ATTEND?

Employees and self employed: forepersons, supervisors, inspectors, safety officers and work team members engaged in operations which involve potential conflict with underground services, such as excavation, trenching, polling, piling and thrusting. Principals, employers, and persons in charge of a place of work: Road Controlling Authorities, contractors/sub-contractors.

COURSE COST

\$495 per person + GST

(minimum numbers apply before a course is confirmed)

INSPECTING ROADS AND ESTABLISHING MAINTENANCE NEEDS

1 DAY

PRESENTER Bill Evans

This course provides an introduction to the methodology used to inspect and determine road maintenance needs.

Employing asset management principles and utilising industry tools, the inspector must then apply skill and knowledge to identify and prioritise maintenance activities, and present cost options balanced against contract conditions and service levels.

TOPICS

- Methods to determine work requirements
- Parameters influencing level of activity
- Understanding pavement materials and modes of failure
- Evaluation options
- prioritising needs
- Preparation of future work programmes
- Typical roles and tools available
- Quality



ON COMPLETION, PARTICIPANTS WILL HAVE THE KNOWLEDGE TO

- define a pavement management system
- identify failure modes
- identify appropriate remedies
- prioritise maintenance needs
- develop criteria for assessing pavement performance
- implement a maintenance management strategy
- understand the contract process
- prepare future work programmes

WHO SHOULD ATTEND?

Road supervisors, new engineers, inspectors, contract and maintenance managers responsible for inspecting road networks to establish maintenance needs.

COURSE COST

\$495 per person + GST

(minimum numbers apply before a course is confirmed)

KERBSIDE COLLECTION TRAFFIC LEADER (KCTL)

1/2 DAY

PRESENTER NZTA approved

This half day course promotes safe working practices, standards and operating procedures in a mobile waste collection operation.

This is the NZ Transport Agency (NZTA) Kerbside Collection Traffic Leader (KCTL), which covers the standards and operating procedures required by the Code of Practice for Temporary Traffic Management (COP/TTM). Appropriately trained and qualified staff must be available to brief all team members on the safe operation of the Kerbside Collection Team.

The course will assist with compliance with the Health and Safety in Employment Act.

If required by a road controlling authority, all new drivers must obtain a Kerbside Collection Traffic Leader qualification within four months of commencing employment.

TOPICS

- Health and safety principles
- Principles of temporary traffic management
- Component parts and layout of a worksite
- Setting up and worksite rules
- Authorised sign use
- Pedestrians and cyclists
- Mobile and semi static maintenance/inspection operations
- Night time protection

COURSE COST

\$300 per person + GST

Course attendance fee

\$40 per person + GST

NZTA Registration fee is an additional to the course fee. This NZTA registration fee is necessary to enable you to be registered as a WCTL.

LEADING HIGH PERFORMING TEAMS

1 DAY

PRESENTER Megan Dawson

This course is an operator's manual for people. It gives you step by step instructions on how to get the best performance out of each person. Work smarter with people and get more done. Learn how to do this in one day.

**Make certain that all members of your team are engaged in the way forward?
Are you getting the results you want?
Are you doing this in the least stressful way for yourself and your team?**

This very powerful seminar has participants

construct their own personalised plan for their team. You can begin using the information right away.

Managers need many of the softer skills that are harder to train than technical ones. The assessment informs the manager of his or her own management style, strategies for directing and delegating, and for motivating and developing staff. It also provides insight into working with the respondent's own manager or senior leaders based on their DiSC styles.

- Examine how you manage your time during the day
- Identify ways that you use time effectively and ineffectively
- Determine specific ways you can improve your time management

TOPICS

- Your Management Style
- Directing and Delegating
- Motivation
- Developing Others
- Working with your Manager

ON COMPLETION, PARTICIPANTS WILL HAVE THE KNOWLEDGE TO

- Increase your personal productivity on the job
- Help you enhance the quality of your team's work with less stress
- Give your team a sense of personal satisfaction and accomplishment

WHO SHOULD ATTEND?

New and Seasoned Managers who want to get more productive time out of each day, for themselves and their team with less stress and more enjoyment.

PRE-COURSE WORK:

Attendees will complete an online assessment of your management style prior to the course.

COURSE COST

\$695 per person + GST

(minimum numbers apply before a course is confirmed)



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LEVEL 1 – BASIC TRAFFIC CONTROLLER (TC) 1 DAY

PRESENTER NZTA approved

This one day course promotes safe working practices, standards and operating procedures at roadwork sites.

This is the NZ Transport Agency (NZTA) Level 1 Basic Traffic Controller (TC), which covers the standards and operating procedures required by the Code of Practice for Temporary Traffic Management (COP/TTM). Appropriately trained and qualified staff must be available to carry out temporary traffic management duties in compliance with the NZTA COP/TTM on all road worksites.

The course will assist with compliance with the Health and Safety at Work Act. This course is the pre-requisite for entry requirement for people wanting further training to Level 1 Site Traffic Management Supervisor (STMS) standard of the Code of Practice for Temporary Traffic Management.

TOPICS

- Health and safety principles
- Principles of temporary traffic management
- Component parts and layout of a worksite
- Setting up and worksite rules
- Authorised sign use
- Temporary traffic management equipment
- Manual traffic control
- Pedestrians and cyclists
- Static operations
- Mobile and semi static and special operations including inspection
- Night time protection
- Low Volume Roads

ON COMPLETION, PARTICIPANTS WILL HAVE THE KNOWLEDGE TO

- Assist the STMS in the setting up of roadwork sites in accordance with approved Traffic Management Plans
- Develop a consistent approach to traffic control



- Analyse Traffic Management Plans in relation to various roading situations
- Apply exercises in the planning and setting up of roadwork sites to actual roading situations
- Understand the requirements for sign selection, placement, safe operating procedures and worksite protection for Level 1 roads.

WHO SHOULD ATTEND?

Any person who carries out work on or within the boundaries of a road. These include NZTA State Highways and Local Authority roads.

COURSE COST

\$345 per person + GST

Course attendance fee

\$40 per person + GST

NZTA Registration fee is an addition to the course fee. This NZTA registration fee is necessary to enable you to be registered as a TC.

LEVEL 1 – SITE TRAFFIC MANAGEMENT SUPERVISOR (STMS) 2 DAYS

PRESENTER NZTA approved

The NZ Transport Agency (ex Transit NZ) Code of Practice for Temporary Traffic Management (COP/TTM) requires that appropriately trained and qualified personnel must carry out and supervise Temporary Traffic Management duties on all road worksites.

The STMS has specific duties and has ultimate responsibility for overall traffic management at the worksite. This two-day course provides training to the requirements of the NZTA Code of Practice for Temporary Traffic Management, and covers the new standards and operating procedures for NZTA and Local Authority roads.

TOPICS

Basic components of a roadwork site

- Checking Traffic Management Plans provided
- Designing Traffic Management Plans for different work stages
- Setting up, checking and removing road works safety measures
- Controlling traffic at a worksite, including Stop/Go operations
- Working safely within the protected area
- Effectiveness of personal protective equipment
- Reporting and recording accidents and crashes
- Plant and work vehicle operation and safety
- Worksite safety audits

ON COMPLETION, PARTICIPANTS WILL HAVE THE KNOWLEDGE TO

- Selection and usage of authorised signage and site protection measures
- Developing and submitting Traffic Management Plans for approval
- Site specific, generic and generic/specific plans for static, semi-static, inspection and mobile worksites
- Relating Code of Practice standards to participants; actual worksite and developing practical options
- Checking and implementing Traffic Management Plans supplied
- Notification and response times required
- Briefing the work team about site traffic management
- Identifying and controlling traffic and other hazards
- Liaising with, and ensuring safety compliance of site visitors
- Setting up, checking, maintaining and safe removal of worksite protection measures
- Carry out or assist in making safety audits of worksites
- Understand and apply the standards for local roads

WHO SHOULD ATTEND?

Anyone person who carries out work on or within the boundaries of a road.

These include NZTA State Highways and Local Authority roads.

PRE-REQUISITE FOR ENTRY

NZTA requires that you must be registered on the NZTA database and hold a **current** Level 1 Basic TC (or TC Refresher) qualification or have held a Level 1 STMS qualification (at any time) in the past. To attend a Level 1 STMS course a person must have held their first TC qualification for a minimum of a month.

Please provide your NZTA Photo ID card number on your registration form.

COURSE COST

\$545 per person + GST

Course attendance fee

\$40 per person + GST

NZTA Registration fee is an addition to the course fee. This NZTA registration fee is necessary to enable you to be registered as a STMS.



MAINTENANCE AND SAFE USE OF SMALL PLANT AND MACHINERY

1 DAY

PRESENTER Bill Evans

The effective maintenance of a roading network is very dependent on managing the risks associated with erosion and inundation from rivers and streams. This workshop will provide an overview of river and stream processes, hydrological and hydraulic analysis tools, risk management techniques and an outline of protection options.

TOPICS

- Selection of small plant and machinery
- Function, components, maintenance of small plant
- Pavement breakers, saws, pumps, small rollers, generators, chainsaws, vibrating plates, screeds, power rammers, etc
- Safe operation of small plant and power tools
- Routine inspection and servicing
- Reservoirs, cooling, lubricating and fuel levels
- Electrical and pneumatic systems
- Contamination and cleaning
- Productivity problems and wastage

ON COMPLETION, PARTICIPANTS WILL HAVE THE KNOWLEDGE TO

- Understand the basic mechanical safety requirements of the plant
- Operate a range of small plant safely
- Know correct procedures for storing and utilising small plant effectively
- Maintain and operate generators and compressors
- Use a pavement breaker safely and effectively.

WHO SHOULD ATTEND?

Both new and experienced operators.

COURSE COST

\$495 per person + GST

(minimum numbers apply before a course is confirmed)

MANAGING FLOODING AND EROSION RISKS FROM RIVERS

1 DAY

PRESENTER Kyle Christensen

The effective management of the risks associated with erosion and flooding from rivers and streams is vitally important for the protection of key infrastructure

and providing for the safety and well-being of the communities that live on floodplains.

This course will provide an overview of river and stream processes, hydrological and hydraulic analysis tools, risk management frameworks and an outline of structural and non-structural flood and erosion management options.

TOPICS

River Processes

- Form and function of rivers
- Estimating future behaviour
- Hydrology including description of methods
- Hydraulics including outline of different tools available

Risk Management Techniques

- Elements of effective flood and erosion risk management
- Introduction to NZS:9401 Managing Flood Risk - A Process Standard

Structural Options

- Outline of river and bridge protection options including rip-rap, sheetpiles, groynes, trees and geosynthetics
- Outline of culvert protection options including stilling basins and secondary overflow paths
- Outline and examples of river diversions and issues with aggradation
- Outline and examples of stopbank design including basis for best practice of "making room for rivers"

Non-Structural Options

- Planning Controls
- Emergency Management including evacuations and associated requirements for flood forecasting

ON COMPLETION, PARTICIPANTS WILL HAVE THE KNOWLEDGE TO

- Have a broad understanding of river processes and how they affect and are affected by adjacent infrastructure
- Awareness of the types of information that can assist with predicting future river behaviour
- Understand the range of hydrological and hydraulic analysis tools available and when to use them
- Understand the different tools available for managing flood and erosion risk

WHO SHOULD ATTEND?

Engineers, planners, scientists, contractors and others responsible for managing flooding and erosion risks from rivers and streams.

COURSE COST

\$695 per person + GST

(minimum numbers apply before a course is confirmed)

MICROSOFT EXCEL – IMPROVING SPREADSHEETS

1 DAY

PRESENTER Rodney Penney

Is Excel frustrating you? Are you taking lots of time creating formulas? Can you quickly and easily create budgets, forecasts, expenses, analyses data, pricing for tenders? Your Excel skills may need improving.

This workshop will hone your skills. Move from the basics to the many advanced Excel functions, make Excel work for you. Learn how to analyse your data with functions, filters, Pivot tables, charting, navigating large spread sheets, save time, and become a confident Excel user.

This hands-on workshop provides participants with:

- Moving beyond the 'table with totals at the bottom' spread sheet
- Learn new techniques to make your spread sheets more efficient
- This is an intermediate/advanced workshop for Excel users who would like a new approach to spread sheet design
- Demonstrate techniques for automating processes
- Securing spread sheet applications
- Examines techniques for more efficient use of analysing data using Pivot Tables

TOPICS

- Navigation to speed up your work flow
- Selection techniques
- Mathematical Rules - Thinking it through!
- Conditional Functions to analyse your data
- Using text functions
- Splitting, combining text eg. first and last names
- Name Ranges
- Hiding columns, rows and formulas
- Protecting workbooks/work sheets
- Saving on time - using lookup tables/lists
- Automating entries
- Auditing formulas - how does the formula work?
- Using multiple worksheets, applying formulas - 3D calculators
- Conditional formatting and data validation
- Sorting and Filtering data
- Subtotalling worksheets
- Manipulating data using Pivot Tables, Pivot Charts, Slicers
- Automation - creating MACROS

THE SKILLS LEARNT ON THIS WORKSHOP WILL

Save you time, save you frustration, enhance your use of Excel and improve the stability and validity of your spreadsheets, and broaden your knowledge of Excel and its capabilities.

ON COMPLETION, PARTICIPANTS WILL HAVE THE KNOWLEDGE TO

- Be able to navigate around workbooks/worksheets more efficiently
- Know the order of mathematical operations for Excel
- Using array formulas
- Understand Absolute and Relative Referencing – Locking a cell
- Naming ranges and cells for better understanding
- Using the many Goto options
- Creating conditional IF function statements
- Combining and splitting text using functions
- Formula auditing to find errors
- Figuring out how formulas work
- Protecting worksheets/workbooks/formulas from being changed
- Use Lookup tables for faster data entry
- Hiding Rows/Columns/Sheets
- Formatting to display conditional values
- Ensuring that the data entered is specific
- Using data lists to remove entry errors
- Creating multiple worksheets
- Using 3D calculations through multiple worksheets
- Consolidating worksheets/workbooks into one summary file/sheet
- Subtotalling areas of data in one worksheet
- Sorting and Filtering data
- Grouping/Outlining data across a spread sheet
- Using data tables
- Understanding Pivot Tables and Pivot Charts
- Using Slicers
- Recording a macro to work more efficiently

WHO SHOULD ATTEND?

Anyone who uses Excel frequently and would like to learn how to get the best from Excel using many tips and tricks.

Find out the power of Excel. Guaranteed to improve your Excel skills and productivity, particularly if you are self-taught.

COURSE COST

\$595 per person + GST

(minimum numbers apply before a course is confirmed)

Note: Laptops will be provided for all participants to use

MICROSOFT PROJECT – RESOURCE MANAGEMENT 1 DAY

PRESENTER Rodney Penney

This intermediate level course is designed for advanced users who have attended Task Management (pre-requisite) and who need to work with budgets and use resources in detail.

This course will continue on from the Task Management and add the Resourcing components. Manage in detail the project's resources, hourly rates, materials and costs; this forms a budget. Manage resource calendars, task types, resource tracking, and resource pool to show against the Baseline.

Attendees will create customised views, tables, details, groups, and filters to view and present project progress.

THIS HANDS-ON COURSE PROVIDES PARTICIPANTS WITH A PRACTICAL UNDERSTANDING OF

- Project Resource Management skills;
- The skills/tools for planning and controlling resources and tasks within projects that will meet the needs of stakeholders;
- Managing costs, budgeting, resource costs, tools for managing a variety of task durations, connectivity to other programs
- How to distribute resources between several projects
- Customising tables, fields, views
- Work break down structure and codes
- Filters, custom filters, grouping, custom grouping
- Monitoring costs
- Managing project progress
- Resource pools linked to projects
- Exporting/importing data

ON COMPLETION, PARTICIPANTS WILL HAVE THE KNOWLEDGE TO

- Demonstrate an understanding of resource types, units, calendars and be able to assign to tasks
- Understand how Work, Units and Duration affects a project
- Demonstrate how Fixed Units, Fixed Duration and Fixed Work affect project timelines, resources and tasks
- Understand and use the resource assignment views
- Apply resource levelling to task and resources
- Track resources, costs and compare with the planned budget
- Customise project views, tables, codes
- Create filters and groups for better reporting and understanding
- Using resource pools between projects
- Track costs versus baseline costs to determine if over or under budget
- Comparing versions.

WHO SHOULD ATTEND?

This intermediate level course is designed for users who have attended the Task Management course and who have created, run projects using MS Project. The attendees could be Project Managers, Business Managers and those responsible for planning, scheduling tasks and resources to meet planned goals for projects. MS Project can be used to manage the progress and budget of multiple projects eg: building bridges, roading sub-divisions, creating tenders, buildings etc.

COURSE COST

\$595 per person + GST

(minimum numbers apply before a course is confirmed)

Note: Laptops will be provided for all participants to use.

MICROSOFT PROJECT – TASK MANAGEMENT 1 DAY

PRESENTER Rodney Penney

Have you attended our Successful Project Management or Tendering for Projects courses? Now put these skills into practical use with MS Project.

This Task Management course provides skills necessary to develop, implement, schedule and manage project plans for roads, bridges, land developments, buildings, marketing, tenders, maintenance etc.

Task Management is a comprehensive introduction for Project Managers, Business Managers, or anyone responsible for scheduling tasks and resources.

This intermediate level course gives all participants the skills that will allow them to be able to create and manage projects successfully. With this hands-on course you will build a list of tasks, build task relationships, assign resources, manage the project against the Baseline, and use Project views and reports to present information to clients, managers and staff. A working knowledge of Excel would be an advantage.

THIS HANDS-ON COURSE PROVIDES PARTICIPANTS WITH A PRACTICAL UNDERSTANDING OF

- Project Task Management planning skills
- The skills/tools for planning and controlling tasks within projects that will meet the needs of stakeholders
- The rules of project planning
- Tools for managing common tasks
- Current best practices in the project industry

TOPICS

- Navigating project views
- How project holds data
- Mouse and keyboard shortcuts

- Task filtering for information
- Starting a project
- Managing the master calendar
- Entering/editing task
- Adding different duration types
- Summary tasks
- Project summary task
- Linking of tasks on the Gantt chart
- Adding lag and lead times
- Understanding constraints
- Adding basic resources
- Adding basic costs
- Reviewing your current project
- Creating a baseline
- Tracking progress of tasks
- Adding hyperlinks/notes
- Formatting projects
- Creating critical/slack Gantt charts for tracking
- Printing your projects
- Communicating using reports
- Consolidating and linking projects to a master plan

ON COMPLETION, PARTICIPANTS WILL HAVE THE KNOWLEDGE TO

- Demonstrate an understanding of the principles of project management
- Plan and manage tasks within a project
- Demonstrate knowledge of how to link tasks
- Demonstrate the use of lag and lead
- Structure a project with summary tasks for better management planning and reporting
- Use the Project Summary to show the total duration
- Explain the use of constraints on projects
- Add basic resources to tasks
- Understand the use of a baseline
- Add basic costs to projects
- Adding hyperlinks, notes to task
- Formatting Gantt charts for improved presentations
- Manage project tasks and being able to update project progress
- Communication project information a with stakeholders
- Transfer the master calendar to the basic template

WHO SHOULD ATTEND?

This intermediate level course is designed for new, basic or self-taught users of Microsoft Project (MS Project). The attendees could be Project Managers, Business Managers and those responsible for planning, scheduling tasks and resources to meet planned goals for projects. MS Project can be used to manage the progress and budget of projects eg: building bridges, roading, sub-divisions, creating tenders, buildings, marketing,

COURSE COST

\$595 per person + GST

(minimum numbers apply before a course is confirmed)

Note: Laptops will be provided for all participants to use

MICROSOFT WORD – IMPROVING DOCUMENTS

1 DAY

PRESENTER **Rodney Penney**

Creating documents for tenders, health and safety, contracts, business proposals: how do you make these documents readable with consistent layouts that adhere to your company's standards?

This course is designed for Word users from basic to intermediate who need to be more efficient with developing documents to an advanced level using many automation aspects of Word. Win more tenders, contracts with consistent, clear and well formatted files.

THIS HANDS-ON COURSE PROVIDES PARTICIPANTS WITH A PRACTICAL UNDERSTANDING OF

- Creating better documents using many advanced techniques
- Creating Table of Contents, updating automatically
- Using tables for layout
- Add images, drawings, understanding file sizes and types
- Inserting Excel graphs, linking to source files
- Labeling images, diagrams, adding Table of Figures
- Using consistent styles to quickly format the documents
- Adding headers and footers
- Working with page break, section breaks - portrait/landscape pages
- Creating/managing templates
- Adhering to the company style guidelines

TOPICS

- Formatting characters, paragraphs
- Adding bullets, numbering, multi-level numbering/bullets
- Creating columns of text
- Using before and after paragraph formatting for better layout
- Using and creating styles to format paragraphs, characters
- Managing tables, using for layout of text, images
- Formatting tables, merging cells, calculating in tables
- Manipulation images, labeling, image sizes, wrapping
- Insert SmartArt - ie: flowcharts, process flows etc.
- Linking spreadsheets and Excel graphs
- Inserting shapes, text boxes to label diagrams
- How to use Quick Parts
- Adding Equations, symbols
- Page layout, using portrait and landscape in the same document
- Adding headers, footers to pages
- Using page numbers across section breaks

- How to use Foot and End Notes
- Navigating using Bookmarks, Hyperlinks
- Watermarks for Draft, Confidential documents
- Creating a Mail Merge to send a file to many people
- How Track Changes can assist with editing documents
- Creating templates to save time

ON COMPLETION, PARTICIPANTS WILL HAVE THE KNOWLEDGE TO

- Create a document that looks great
- Use all the same fonts, sizes, paragraph, indentations
- A well design layout of images, graphs, tables
- Have a multipage files with landscape and portrait pages
- Have page numbers, logos on all pages
- Know how to use styles for consistent looking text and paragraphs
- Understand how Table of Contents are created and modified
- Use tables to create a pleasing layout of text and images
- Add objects to label, illustrate document processes
- Use Quick Parts to save time
- Use bookmarks, hyperlinks, styles to navigate files
- Understand how page break, section break can be used
- How watermarks work for you
- Create a Mail Merge for sending letters/ files to many people
- Create and manage templates

WHO SHOULD ATTEND?

This course is designed for all Word users, Project Managers, HR, Health and Safety coordinators, contract writers, creators of procedure manuals, procedure documentation, whether small or large files. Have you attended any courses and/or now have to create documents that require formal processes, use of company standard formats? Then this course is for you.

COURSE COST

\$595 per person + GST

(minimum numbers apply before a course is confirmed)

Note: Laptops will be provided for all participants to use



NUCLEAR DENSITY METER (NDM) – LICENSE COURSE

1/2 DAY

PRESENTER Stu Moulding (Civiltrain)

This interactive classroom based course is designed for anyone who wishes to obtain a license to own radioactive material, such as NDM's.

Stu Moulding is an approved trainer for the Ministry of Health for radiation licensing. If you have any staff members that need a license, this is the course they need to attend.

This is an easy to follow course with plenty of backup support around some other issues with owning NDM's. For example; free Radiation Safety Plan (RSP) templates to those who require them. Plus contacts within the industry around personal monitoring and wipe testing.

TOPICS

- Nature and sources of ionising radiation
- Biological effects of ionising radiation and radiation risks
- ICRP principles of radiation protection
- Legal framework and regulations
- Transport and storage requirements
- Radiation Safety plans
- Incidents involving NDM's
- Sealed source manufacture
- Disposal of radioactive materials

CERTIFICATION

- At the end of this course candidates will need to pass an examination which can be completed in their own time
- Once completed the candidate will receive a certificate that is recognised by the ORS as satisfying the core of knowledge

WHO SHOULD ATTEND?

- People who intend to apply for a license under CSPI5 - Use of NDM's
- Ministry of Health requires evidence of 'continuing education' every two years

COURSE COST

\$395 per person + GST

(minimum numbers apply before a course is confirmed)

NUCLEAR DENSITY METER (NDM) – WHAT YOU NEED TO KNOW

1/2 DAY

PRESENTER Stu Moulding (Civiltrain)

This interactive classroom based course is aimed at anyone who is using the Nuclear Density Metre (NDM), or whose work may be affected by the NDM. In this half day course we cover all you need to know about the NDM. You will also learn some handy tricks about best practice use, storage and transportation.

These are radioactive devices at the end of the day, so there are some rules and regulations around their use, storage and transport.

We will also cover off many other technical aspects of Nuclear Density Metre (NDM) usage, troubleshooting, and issues with laboratory benchmark tests (e.g. Proctor Curves, Marshall and Voidless Density tests)

TOPICS

- What an NDM is
- How it works
- What an NDM actually measures
- How we interpret the results
- The implications of poor NDM use
- How we store it
- How we transport it
- How we look after it
- Collaboration and record keeping

ON COMPLETION, PARTICIPANTS WILL HAVE THE KNOWLEDGE TO

- Have a full understanding of a Nuclear Density Metre (NDM)
- Be able to interpret the results to the advantage of the contractor
- Be proficient in the storage and transportation of a Nuclear Density Metre (NDM)

WHO SHOULD ATTEND?

Anyone who's work is affected by the use of a NDM. Whether they are technicians or engineers, your staff will gain a huge amount from this course.

COURSE COST

\$395 per person + GST

(minimum numbers apply before a course is confirmed)

OPERATION AND SAFE USE OF A ROAD/ CONCRETE SAW

PRESENTER Laurie Brown

People using concrete and masonry cutting equipment face a wide range of hazards, such as silica dust, toxic exhaust fumes, saw kick-back, blade fracture, vibration, noise, slips, falls and manual handling.

Most at risk are operators of hand-held concrete and masonry saws. This equipment is more prone to the violent forces unleashed when a saw blade jams inside a cut than from fixed saws. These forces, commonly referred to as kick-back, push-back or pull-in, are difficult and sometimes impossible to control, and place the operator at risk of serious and potentially fatal injury from an out-of control circular saw.

Many minor roadwork and maintenance contract jobs require use of concrete saws for repairs and installation of services, drainage, crossings, kerbing, driveways, footpaths, manholes and concrete pipes, inspection chambers and kerb and channel construction.

This course aims to give workers knowledge of the safe use, kick back and injuries relating from the use of high powered saws.

TOPICS

- Safe handling and use
- types of blades
- maintenance of saws
- environmental issues
- PPE requirements

WHO SHOULD ATTEND?

All general workers - including roading, utilities and drainage contractors and supervisors, involved in construction works requiring the use of concrete saws in their daily activities.

COURSE COST

Because this course has a practical component which requires equipment to be used on site, this course can only be run on an in-house basis where there is a suitable site. Please contact us to obtain a quotation for this training.



PAVEMENT AND REHABILITATION DESIGN

2 DAYS

PRESENTER John Hallett

Since the adoption of the Austroads Pavement Design guide in NZ, pavement and rehabilitation design requires an understanding of mechanistic analysis procedures and Austroads approved mechanistic analysis program.

This course covers pavement design and rehabilitation design in accordance with the latest version of the Austroads Pavement Design Guide and the associated NZ Guide to Pavement Structural Design and Guide to Pavement evaluation and Treatment Design and contains hands-on applications of mechanistic analysis in the design process.

TOPICS

- Fundamentals of mechanistic analysis
- Materials characterisation
- Design traffic determination
- Design procedures for new pavements and rehabilitation treatments
- Hands-on mechanistic analysis applications

ON COMPLETION, PARTICIPANTS WILL HAVE THE KNOWLEDGE TO

- Design new pavements and rehabilitation treatments using mechanistic analysis in accordance with Austroads and the NZ Guide requirements
- Appreciate the attributes of Mechanistic analysis and use it for design and analysis of different pavement configurations
- Apply the latest versions of the Austroads Pavement Design Guide and the NZ Guides

WHO SHOULD ATTEND?

Engineers and technical staff involved in, or needs an introduction to, pavement design.

COURSE COST

\$995 per person + GST

(minimum numbers apply before a course is confirmed)

PAVEMENT INVESTIGATION, DESIGN AND CONSTRUCTION TESTING

1 DAY

PRESENTER Ramiz Iskander

Understanding the main causes of road pavement failures and especially premature pavement failure is crucial in determining the correct design.

Ensuring that the pavement has been properly constructed is key to performance and longevity of pavements and surfacing.

TOPICS

- Best practice guidelines for pavement investigation and testing
- Pavement testing in the field and in the laboratory
- Pavement analysis using FWD back-calculation
- Pavement Failure Modes/Causes
- Pavement and surfacing design for new roads, widening and rehabilitation
- Flexible and rigid Pavement
- Pavement layers Moduli
- How we look after it
- Construction surveillance and testing requirements

ON COMPLETION, PARTICIPANTS WILL HAVE THE KNOWLEDGE TO

- Specify right pavement geotechnical investigations
- Understand Pavement Failure Causes
- Ensure that pavements are constructed correctly
- What Moduli to be selected for various pavement layers and materials
- What testing and surveillance is required during and post pavement construction
- Holdpoints during construction

WHO SHOULD ATTEND?

Contractors, Consultants, NZTA and local authority staff involved in roads and highways pavement investigation, design and construction

COURSE COST

\$695 per person + GST

(minimum numbers apply before a course is confirmed)

PAVEMENT SURFACING

1 DAY

High quality pavements, along with the correct selection of pavement surfacing materials are critical to the safety, longevity and condition of New Zealand roads.

This one day course will outline and identify the multiple types of surfacing currently in use, the variety of materials used in maintaining these pavements, as well as design, equipment use and surfacing type selection.

Asphalt and Chipseal practices will be covered at length including cutting and preparation, along with procedures for patching both of these surfacing types.

Current Health and Safety practices will also be covered in depth relating to these specific workplace environments.

TOPICS

- Health and Safety Practices
- Pavement Construction Fundamentals
- Intent and Limitations of Pavement Surfacing
- Types of Surfacing
- Materials
- Testing of Materials
- Basic Design
- Application Equipment and Methods
- Surfacing Selection
- What does a successful pavement surface look like?

ON COMPLETION, PARTICIPANTS WILL HAVE THE KNOWLEDGE TO

- Be able to respond to fire incidents at a civil infrastructure work site
- Demonstrate knowledge of working safely at sites under temporary traffic management
- Describe bituminous materials
- Demonstrate basic knowledge of safety relating to bituminous materials
- Learn about pavement bandaging
- Demonstrate basic first aid relating to liquid bitumen and bitumen additives
- Demonstrate knowledge of the compaction of hot mix asphalt
- How to cut and prepare asphalt and chip seals
- Show a basic understanding of asphalt and chip seal patching procedures
- Understand the National Code of Practice within the reinstatement processes around the 1m rule.

WHO SHOULD ATTEND?

Project engineers, laboratory staff, specifiers, plant and laying supervisors, new engineers, council and NZTA staff concerned with road surfaces.

COURSE COST

\$520 per person + GST

(minimum numbers apply before a course is confirmed)

PREPARING A TENDER

BUILD UP A TENDER FROM FIRST PRINCIPLES

1 DAY

PRESENTER David Hooker

Having the Winning Tender is essential to the continuing viability of any contractor. It is about having the right price and accurate calculations. Clients want an assurance that contractors making a bid do so with a full understanding of what is required, know their base costs and can be assured that the tender they receive



is well prepared and competently put together for the specific job requirements.

Winning tenders means understanding the issues and requirements of the scope of works proposed. It means pricing all the components of the works in a logical, verifiable way that wins the tender and results in a profit for the contractor when the works are completed to the agreed standards in accordance with the agreed time-line. Producing good tenders requires a methodical, accurate way of costing the components of work that must be completed to achieve the required scope of work.

If you are new to tendering or wish to have a refresher, then this course is a must. You will learn the tender build-up process from the perspective of a contractor using a basic Microsoft Excel Spreadsheet.

This course complements our one-day course 'Understanding the Tender Process'.

TOPICS

- What are the scope of works covered by the Tender
- What does the Estimator have to do?
- The HOW TO of preparing a tender price from 1st Principles
- Preparing the tender using a BASIC spreadsheet
- Base Rate Calculations - Knowing your costs!
- Estimating costs: materials, labour, plant and subcontractor unit costs
- Preliminary and General (P & G) costs (time related and fixed)
- Calculating on-site overhead and profit percentages and rate per working day
- Preparing the final price
- Putting the proposal together

ON COMPLETION, PARTICIPANTS WILL HAVE THE KNOWLEDGE TO

- Understand the processes necessary to prepare a successful tender
- Prepare a simple tender spreadsheet
- Learn a basic process to achieve consistency in tendering
- Feel the personal satisfaction of generating a sample tender price using Excel Spreadsheet

Note: participants are required to bring a laptop with them to the course. Participants MUST be familiar with using Excel spreadsheets.

WHO SHOULD ATTEND?

People newly responsible for preparing tenders for civil construction and maintenance, or those just wanting a refresher. Experience in using Excel spreadsheets is essential.

COURSE COST

\$520 per person + GST

(minimum numbers apply before a course is confirmed)

PROCESS IMPROVEMENT

2 DAYS

PRESENTER Steven Briggs

Faster, cheaper, better quality - the demands on your output are always increasing. How do you manage all these at the same time? Expediting particular tasks or focusing on one thing often means the problems simply happen elsewhere. It's frustrating!

On this course you'll quickly learn all about why processes fail and how to improve them simply and forever. You will be guided through the simple five step approach in our highly interactive two day course. It's a practical approach that is easy to apply to any situation.

You will be guided through the simple 5 step approach in our highly interactive two day course. It's a practical approach that is easy to apply to any situation.

TOPICS

- What, why and how of processes
- Defining the problem
- Getting the facts
- Quality tools
- Analysing the facts to determine likely causes
- Finding solutions
- Agreeing the fix
- Forming a plan
- Successful implementation
- Checking the problem stays fixed

ON COMPLETION, PARTICIPANTS WILL HAVE THE KNOWLEDGE TO

- A simple approach to improving processes
- An easy way (one page) to document the problem and track the solution
- How to determine the root cause of a problem
- Simple ways to capture information about the problem
- Techniques to measure the problem
- Techniques to find innovative solutions to problems
- How to present a solution to get buy-in
- How to make a realistic plan
- How to measure progress and identify issues
- How to make sure the problem is fixed
- How to prevent problems coming back to haunt you!

WHO SHOULD ATTEND?

This is a generic course and not solely for the roading industry. This course will be of assistance to anyone who leads a team or has to fix problems as part of their job.

COURSE COST

\$995 per person + GST

(minimum numbers apply before a course is confirmed)

PRODUCTIVE CONFLICT

1 DAY

PRESENTER Megan Dawson

Better understand how to respond in conflict situations. Learn communication strategies for efficiently dealing with conflict. Discover the destructive and the productive behaviors that are typical with different DiSC personality styles.

Clearly one of the most stressful, awkward, and inevitable experiences in the workplace is inter-personal conflict. Now we have a tool and training materials focused on workplace conflict using the language of DiSC. With all the attention placed on conflict resolution maybe it is time to change our view of conflict and resolve how we can use it in a positive way in the workplace.

Learn how to leverage conflict so you can use it in a positive way in your organization.

Conflict may be influenced by an organization's culture, hierarchy, working styles, and everyday human relationships. While it is a common part of any working relationship, people's response to conflict is entirely in their control. Everything DiSC® Productive Conflict improves self-awareness around conflict situations, highlighting how DiSC® can help you recognize destructive conflict behaviors and make a decision to react differently.

TOPICS

- 15-page personalized profile
- A model for thinking about conflict behavior
- Opportunities for participants to evaluate their own and others' behavior in conflict
- Tips for productive conflict
- A framework for planning behavior change

ON COMPLETION, PARTICIPANTS WILL HAVE THE KNOWLEDGE TO

- Respond to conflict situations in an effective way
- Improve self-awareness around conflict behaviors
- Developing positive conflict behavioral reactions while curbing destructive behaviors
- Improve workplace results and relationships

WHO SHOULD ATTEND?

Everyone who wants to get more productive time for themselves and their team, with less stress and more enjoyment.

PRE-COURSE WORK:

Attendees will complete an online assessment of their management style prior to the course.

COURSE COST

\$695 per person + GST

(minimum numbers apply before a course is confirmed)



REFRESHER – LEVEL 1 STMS 1 DAY

PRESENTER NZTA approved

Registration for Level 1 Site Traffic Management Supervisor (STMS) expires at the end of three years, at which time you will need to attend a one-day refresher course to regain this qualification.

This course provides training of the major changes to the NZ Transport Agency (ex Transit NZ) Code of Practice for Temporary Traffic Management (COP/TTM). Including, low volume roads, local body roads, change in responsibilities, safety audit procedure, mobile operations and generic plans.

TOPICS

- Changes to the NZTA COP/TTM
- Low Volume roads
- Mobile Operations
- Signage
- Change in responsibility
- How to use generic plans
- Safety audit procedures
- Changes to HASIE Act and how you are affected as a road worker

ON COMPLETION, PARTICIPANTS WILL HAVE THE KNOWLEDGE TO

- Recognise and understand the changes to the Code of Practice
- Apply the criteria for low volume roads
- Relate Code of Practice standards to participants; actual work site and developing practical options
- Apply the changes for mobile operations
- Brief the work team about site traffic management
- Apply generic plans
- Identify and control traffic & other hazards
- Understand the responsibilities following the amendment to the HASIE Act
- Set up, check and maintain work site protection measures
- Carry out or assist in making safety audits of work sites
- Understand the format of the local roads supplement to COPTTM

WHO SHOULD ATTEND?

Any person who is registered on NZTA database as a 'Level 1 Site Traffic Management Supervisor (STMS)' with their qualification about to expire.



PRE-REQUISITE FOR ENTRY

NZTA requires that you must hold a NZTA Level 1 STMS qualification (expired no longer than one year). Please provide your NZTA Photo ID card number on your registration form.

COURSE COST

\$345 per person + GST

Course attendance fee

\$40 per person + GST

NZTA Registration fee is an additional to the course fee. This NZTA registration fee is necessary to enable you to be registered as a STMS.

REINSTATEMENT OF SERVICE TRENCHES

AVOID COSTLY REWORK TO
SUBURBAN SERVICE TRENCHES

1 DAY

PRESENTER Ian Anderson

Rough surfaces increase road user costs. Over recent years many roading authorities have reported instances of poor trench reinstatement that gave rise to road surfacing problems. To improve public relations, reduce the possibility of accidents and reduce maintenance and road-user costs, present day performance based procedures are requiring that trenching and reinstatement contractors take greater responsibility for their actions.

TOPICS

- Planning (introduction to aims and approvals)
- Excavation of trenches
- Trench foundation treatment
- Compaction of backfill materials, principles and selection
- Plant selection and operation techniques
- Backfill placement and compaction practices
- Worksite safety
- Compaction of materials and testing
- Options for pavement and surfacing materials
- Trench preparation and practice in the placing of materials, compaction and testing

ON COMPLETION, PARTICIPANTS WILL HAVE THE KNOWLEDGE TO

- Identify necessary approvals to undertake reinstatement
- Choose effective excavation methods
- Understand key principles of compaction
- Choose suitable backfill, placement and surfacing
- Match compaction plant with trench size and needs

WHO SHOULD ATTEND?

- New and experienced workers
- Supervisors

- Technical management staff
- Personnel from Local Authorities and services utility authorities
- Contractors
- Consulting organisations
- Inspectors
- Supervisors

COURSE COST

\$450 per person + GST

(minimum numbers apply before a course is confirmed)

ROAD CONDITION RATING – SEALED ROADS

1 OR 2 DAYS

PRESENTER Chris Scott

Reliable identification of defects is vital to the proper functioning of NZ Transport Agency (NZTA) Road Assessment and Maintenance Management system.

NZIHT trains all of this country's road condition raters directly. Successful workshop participants receive a Practising Certificate enabling them to undertake condition rating surveys of sealed roads on NZTA funded works on State Highways and Local Authority roads.

NZIHT welcomes enquiries for training from anyone wishing to be trained as a rater. The Institute maintains a register of currently certified sealed road raters for public inspection and will on request provide details to road controlling authorities prior to acceptance of any professional services tender for road condition rating.

TOPICS

- Condition rating parameters
- Road rating sections and locations
- Defect identification
- Data recording
- Field validation exercises
- Allowable limits of variation
- Competency assessment for certification

ON COMPLETION, PARTICIPANTS WILL HAVE THE KNOWLEDGE TO

- Understand rating parameters
- Identify and locate rating sections and inspection lengths accurately
- Identify rated defects in sealed surfaces
- Accurately measure and record defects in sealed surfaces
- Obtain a practising certificate as an accredited rater

WHO SHOULD ATTEND?

Any person wishing to undertake condition rating surveys on sealed roads for NZ Transport Agency (NZTA) subsidised work.

2 DAY COURSE

New Raters (with less than 2 years experience) are required to:

- Attend the full two day Condition Rating Workshop
- Attend the one day “refresher” workshop the following year

After two consecutive years training raters are then considered experienced and only need to attend the one day “refresher” workshop every second year.

1 DAY COURSE (2ND DAY)

Experienced Raters are those who have attended two consecutive years training. To remain current, they must attend the one day “refresher” workshop every second year. ie: if you attended a 1 day workshop within the last 12 months, then you are not required to attend again until 2020.

COURSE COST

\$520 per person + GST
for one day course (2nd day)

\$795 per person + GST
for two day course

(minimum numbers apply before a course is confirmed)

ROAD LIGHTING COURSE A – TO AS/NZS 1158

1 DAY with optional night tour

PRESENTER Graeme Culling & Geoff English

This one day course covers the series of AS/NZS 1158 Standards for lighting for roads and public spaces. The design of lighting for vehicle and pedestrian road users is covered as well as historical reasoning behind “why we light roads”.

It allows users to gain full advantage from the broad guidance the standards now provide. The course will cover the elements of good road lighting design for all parts of the road network using the computer techniques specified in the standard.

An understanding of the principles and benefits of road lighting is important. The New Zealand road lighting series of standards is continually being updated. The latest review of the standards commenced in 2012 motivated by a need to incorporate LED lighting. The review is now extending to other areas and is likely to lead to a number of changes to reflect the latest research results from New Zealand and overseas, and to incorporate user feedback on the original publications. Among other things the changes are likely to include a review of the NZ road reflection tables and it is important that designers and asset owners understand the reason for the changes and how best to deal with them. The 2015 course material will address all of the revisions both proposed and incorporated.

TOPICS

- Why we light roads
- Safety benefits
- Photometric issues and principles
- Field measurements
- Developing a lighting hierarchy
- Outline of the new issue standards
- Light sources including LED lighting
- The basics of design methods
- Elements of good design
- The lighting of pedestrian crossings
- The basic principles for the lighting of tunnels and underpasses
- The road lighting asset and key measures to minimise lifetime costs
- Specific case studies (if submitted by the attendees)

ON COMPLETION, PARTICIPANTS WILL HAVE THE KNOWLEDGE TO

- Knowledge of Public Road Lighting Standards and their application to Public Lighting Tasks
- Knowledge of the model behind the calculation of the light technical parameters for the various lighting levels in Category V and Category P
- A basic knowledge of the design principles in completing any public lighting design tasks (with emphasis on road lighting)
- An appreciation of the content and rules within the Standards and the reasoning for them.

WHO SHOULD ATTEND?

Road lighting infrastructure asset owners, engineers, technicians and designers from local road controlling authorities, traffic and design engineers from consultants and architects involved in the design of road lighting for vehicle and pedestrian traffic.

NIGHT TOUR

An optional night tour is available on the evening of this course. This tour of road lighting installations will take approximately two hours, commencing at dusk. Participants will get to see examples of both good and not so good installations and, weather permitting, an opportunity to observe and/or take lighting field measurements. An additional charge of \$70.00 per person + GST is payable for the optional night tour.

COURSE COST

\$450 per person + GST

OR

\$750 per person + GST to attend 2 consecutive days

\$70 per person + GST additional Night Tour

Participants are encouraged to bring copies of the AS/NZS 1158 series of standards and any case studies they may want to share or get the group to comment on.

(minimum numbers apply before a course is confirmed)

ROAD LIGHTING COURSE B – DESIGN TRAINING

1 DAY with optional night tour (previous evening)

PRESENTER Graeme Culling

This Road Lighting Design Training course provides practical guidance for those involved in the detail of design process. Road Lighting Design is a skill that is essential for Asset owners of Road Lighting (Road Controlling Authorities, Councils and NZ Transport Agency) to have ready access to. The course concentrates on the design methodology for roads lit to both Category V and P - but also covers public space lighting, lighting of pedestrian crossings and tunnel lighting principles.

The luminance approach to road lighting design requires attention to the detail for all aspects of the project. Every Category V lighting scheme requires specific analysis. For each and every design it is essential that:-

- an adequate ‘design brief’ is established
- the asset owner has access to those with skills to define adequately a design brief
- the asset owner has access to those with appropriate training in the solution of a road lighting design task
- the asset owner can evaluate those solutions and correlate them to the brief originally established
- the asset owner has an understanding of any lifetime maintenance issues (costs) that the design promotes

For category P similar disciplines but different calculation techniques are used

This one day design course builds on the NZIHT Road Lighting Course A. It covers the design methodology of the series of AS/NZS 1158 Lighting Standards and covers relevant material from the “right light” project.

TOPICS

- Building a road lighting design brief
- Understanding a road lighting design brief
- For Category V tasks
 - using computer based solution finders to look at appropriate lighting options
 - using a computer tool to finalise selected design and ensure design is compliant and meets (and does not exceed) the design brief.
 - straight road and complex intersection analysis
 - implementation of the various layout rules
- For Category P tasks
 - using computer based information to establish appropriate lighting solutions
 - implementation of the various layout rules
- For Pedestrian Crossing lighting
 - an understanding of the LTP’s and methods to calculate them

Luminaire Photometrics and key components as necessary

- Specific case studies (attendees are **invited and encouraged** to bring their own tasks for consideration and to see solutions evolve)

ON COMPLETION, PARTICIPANTS WILL HAVE

- A consolidated knowledge of design of Road and Public Space Lighting tasks
- An in depth knowledge of the design principles and methodology in completing any public lighting design tasks (with emphasis on road lighting)
- An appreciation of when designer inputs are required for interpretation of the standards for lighting tasks with particular requirements i.e thinking "outside the square"
- Observed appropriate design presentation methodologies that the client should be provided with.

WHO SHOULD ATTEND?

Lighting Designers, or those wanting a more in depth understanding of the detail of the lighting design process. Engineers and designers from local road controlling authorities, traffic and design engineers from consultants and architects involved in the design of road lighting for vehicle and pedestrian traffic.

NIGHT TOUR

An optional night tour is available on the evening prior to this course. This tour of road lighting installations will take approximately two hours, commencing at dusk. Participants will get to see examples of both good and not so good installations and, weather permitting, an opportunity to observe and/or take lighting field measurements. An additional charge of \$70.00 per person + GST is payable for the optional night tour.

Attendees must wear a hi-viz jacket.

COURSE COST

\$450 per person + GST

OR

\$750 per person + GST to attend 2 consecutive days

\$70 per person + GST additional Night Tour

Participants are encouraged to bring any case studies they may want to comment on. The course references material in the AS/NZS 1158 series of standards. Road Lighting Design Software (Perfectlite as a training version) is demonstrated.

(minimum numbers apply before a course is confirmed)



SAFETY IN TRENCHES 1 DAY

PRESENTER Laurie Brown

This course covers the safety aspects of working in and around trenches within the civil industry and covers drainage work from small pipe, small scale excavations to large storm water and deep excavations.

The construction and instillation of shoring and retaining equipment and materials is covered in detail and there are exercises in design during the day. It is a detailed look at what can happen if the correct procedures are not taken. There have been many accidents and deaths involving work around trenches and with the correct training these accidents can be reduced.

From the Company's point of view all staff need to have this knowledge and training to make themselves safe.

From the staff members point of view the course provides critical information about safety and working in trenches. How to keep your self safe while working in trenches and also covers safety observer responsibilities.

TOPICS

- Knowledge on dangerous excavations
- Environmental requirements for the handling of materials
- Requirements for storage of excavated materials
- Health and Safety requirements.
- Planning for the safe working of the site
- Slings and lifting safely with machinery
- Hazard management
- Hazard ID
- Shoring and retaining unstable soils
- Dangers of exposing services

ON COMPLETION, PARTICIPANTS WILL HAVE THE KNOWLEDGE TO

- The attendees of this course will have the knowledge and understanding to be able to work safely in and around trenches on civil sites
- Understand the requirements as set by the environmental act pertaining to trenching
- Knowledge of the health and safety act relating to confined spaces
- Understand the dangers of working in trenches

WHO SHOULD ATTEND?

- All those working within the civil industry and who are exposed to the dangers of trenching and drainage.
- Staff members of companies who want to be able to show training and professional development of their staff in these areas.
- Company staff members who need to show training under safety standards for all staff.

COURSE COST

\$495 per person + GST

(minimum numbers apply before a course is confirmed)

SLINGING, LIFTING, MOVING & PLACING

WITH AN EXCAVATOR OR LOADER

1 DAY

PRESENTER Laurie Brown

When on the job, there will be times where you need to move or place equipment and there is a right way and a wrong way to do this.

Equipment can be large and heavy such as drainage pipes and manholes. To help you, it is important to move and place this large equipment with either a loader or excavator.

The information that is presented to you on course will give you the industry standard on the step you will need to do to get the job done efficiently and safely.

This course aims to equip individuals with knowledge of slinging, lifting, and placing with an excavator or loader.

TOPICS

- How to sling a load and secure it
- Communication with lifting loads - hand signals
- Hazards while slinging and lifting
- How to check lifting gear
- Safe operation of machinery been used to lift

ON COMPLETION, PARTICIPANTS WILL HAVE THE KNOWLEDGE TO

- Describe the principles for using an excavator or loader for lifting and moving loads
- Describe types and inspection of lifting attachments on excavators and loaders
- Demonstrate knowledge of lifting and securing gear used with excavators and loaders
- Describe communication for slinging, lifting, moving and placing operations
- Demonstrate knowledge of hazards associated with slinging, lifting, moving and placing, and describe requirements for their control
- Demonstrate knowledge of slinging, lifting, moving and placing of components, materials, and objects at civil infrastructure worksites

WHO SHOULD ATTEND?

Operators and people affected by slinging loads, ground people who sling the load, Drainage crews. Project Managers may also benefit from attendance at this course to understand the process and how it may affect planning processes. Material supplier yards people who undertake the lift. Local council staff who work in recycling and tip environments.

COURSE COST

\$495 per person + GST

(minimum numbers apply before a course is confirmed)

STABILISATION OF ROAD PAVEMENTS – FUNDAMENTALS

1 DAY

PRESENTER Ian Anderson

Stabilisation can provide major benefits for roading projects of all sizes, and significantly offer acceptable cost effective alternatives to the use of premium sources of aggregates. With the advent of NZTA performance specifications (B/3 and M/22), there is the opportunity to use alternative materials in conjunction with stabilisation techniques, to meet strength and durability requirements for pavements. This workshop provides an overview of the main issues involved with the design and construction of sealed and unsealed pavements using stabilisation.

TOPICS

- Why, and when to stabilise
- Investigation and testing
- Cement treated basecourse
- Alternative stabilising agents, lime or cement, bitumen: factors to consider
- Pavement design principles
- Planning and economic issues
- Pavement life considerations
- Subgrade, sub-base and basecourse treatment
- Construction basecourse, including compaction
- In-situ stabilisation
- Road rehabilitation, and how stabilisation can help
- Area treatment options
- Use of recycled material
- Seal coat application to stabilised surfaces

ON COMPLETION, PARTICIPANTS WILL HAVE THE KNOWLEDGE TO

Apply the use of material stabilisation to the design and construction of pavements.

WHO SHOULD ATTEND?

Construction managers and supervisors will benefit from this course. It also may provide added understanding for road asset managers.

COURSE COST

\$450 per person + GST

(minimum numbers apply before a course is confirmed)



SUCCESSFUL PROJECT MANAGEMENT

2 DAYS

PRESENTER Steven Briggs

The pace of change means that more and more inexperienced people are being asked to lead projects. The deadlines are often very close; the available resources are limited; and the stresses brought on by the pressure to succeed are intense. The conflicting demands from the day job and the project may be impossible to reconcile. Is it any surprise that 70% of projects fail to deliver in full, on time and within budget?

We've distilled the wisdom and experience of project managers into a simple six-step approach to leading a successful project. We'll help you learn it effortlessly in our highly interactive two day course. It's a practical approach that is easy to apply to any situation.

TOPICS

- Defining the project concept
- Building a business case
- Managing the team
- Planning
- Risk management
- Quality management
- Scheduling
- Resourcing
- Project execution and control
- Closing a project

ON COMPLETION, PARTICIPANTS WILL HAVE THE KNOWLEDGE TO

- A simple approach to managing projects successfully
- How to build the team
- Techniques to identify and deal with potential issues before they become problems
- How to get people on their side
- How to define a project's scope
- How to make a realistic plan
- How to measure progress and identify issues
- How to avoid scope creep
- How to manage project meetings
- How to finish a project and communicate the lessons learned

WHO SHOULD ATTEND?

This course will be of assistance to anyone new to the project world and who has to run or take part in projects as part of their job.

COURSE COST

\$995 per person + GST

(minimum numbers apply before a course is confirmed)

SUPERCHARGED SUPERVISORS TOOLKIT

1 DAY

PRESENTER Megan Dawson

Leaders are people who know how to achieve goals and inspire people along the way. It's vital that you not only know what leadership behaviours require, but also how to do it.

Good leaders in return get more job satisfaction out of their role. Participants will firstly explore their own style of leadership and then learn how to adapt their style to bring out the best in others. You will leave with your own personal action plan to raise the bar for you and your team.

This highly interactive and highly acclaimed course will address four essentials to the supervisor.

- What you have to BE
- What you have to KNOW
- What you have to DO
- What you have to LEARN.

TOPICS

- How to lead - what you actually do!
- Understanding your own and others behaviour
- What motivation is
- Team Building skills
- Delegation guidelines
- Principles of training
- Briefing and Debriefing your team
- Problem solving
- Being a coach

ON COMPLETION, PARTICIPANTS WILL HAVE THE KNOWLEDGE TO

- Know yourself and seek self-improvement
- Make sound and timely decisions
- Set the example
- Know your people and look out for their well-being
- Develop a sense of responsibility in your subordinates
- Ensure that the task is understood, supervised and accomplished
- Employ your team in accordance with its capabilities

WHO SHOULD ATTEND?

This course will be of assistance to anyone in Supervision.

PRE-COURSE WORK:

Attendees will complete an online assessment of their management style prior to the course.

COURSE COST

\$695 per person + GST

Includes pre-course DiSC online profiling

(minimum numbers apply before a course is confirmed)

SURVEY AND SET OUT

1 DAY

PRESENTER Steve Parker

This is a practical course that excites and enables all field staff to read and interpret plans and assist with survey and setting out activities.

The course gives a strong emphasis on understanding construction plans, dimensions, datums, survey marks, accuracies, elevations and layouts to enable all participants to confidently appreciate the works scope and detail.

Basic measurements, offsetting and marking out for construction works are discussed and demonstrated. Understanding with field exercises using levelling equipment and level reductions to establish design heights gives field staff new skills.

The course reinforces field checking, recording, basic calculations and good survey techniques.

TOPICS

- Understanding plans and symbols
- Land Information NZ website as a source of survey information
- Explaining survey and set out equipment
- Use of levels, digital grade level, tapes and laser levels
- Set out of pegs, profiles, grades and stakes
- Understand reference systems and coordinates.
- Reading, recording and reducing level observations
- Construction site survey considerations
- Area and volume calculations.
- Basic measurement methods and checks

ON COMPLETION, PARTICIPANTS WILL HAVE THE KNOWLEDGE TO

- Set up, read, record and calculate using an automatic level
- Assist a surveyor with planning and preparation work for survey setout
- Assist a surveyor to take field measurements
- Understand construction drawings and their functions
- Setout basic structures
- Record as-built information to present council's for approval

WHO SHOULD ATTEND?

Forepersons, plant operators, technicians, field staff who are required to assist in the set out and maintenance of civil work sites including road works.

COURSE COST

\$695 per person + GST

(minimum numbers apply before a course is confirmed)

THE FUNDAMENTALS OF ASPHALT MIX

2 DAYS

PRESENTER David Jones

Asphalt paving mix design requires a clear understanding of design standards and specification requirements. Design also demands close attention to the details of testing procedures to ensure an economical blend and gradation of aggregates. Durable asphalt mixes must provide for stability, sufficient voids and workability to permit efficient construction.

This course provides an overview of asphalt mix design and includes the latest design methods from America and Australia. The methods will include Austroads Selection and Design of Asphalt Mixes and SHRP Superpave Mix Design.

It has also been updated to include the draft specification for dense graded, stone mastic and fine graded asphalt paving mixtures NZTA M/10.

This will assist engineers and supervisors in their understanding of the design process and specifications.

TOPICS

- Objectives of design mix
- Desirable mix properties
- A review of non-structural mixes
- Reviewing mix types and practical considerations
- Reviewing mix design and procedures
- Performance based specifications
- Quality assurance
- Production testing and interpretation of test results
- Overview of asphalt manufacture and construction techniques

ON COMPLETION, PARTICIPANTS WILL HAVE THE KNOWLEDGE TO

- Identify objectives of mix design and the properties required
- Understand methods for the design of non-structural mixes taking practical considerations into account
- Understand the importance of production testing and interpretation of results
- Understand the implications of performance based specifications and quality assurance
- Have an overview of asphalt plant operations and construction techniques

WHO SHOULD ATTEND?

Engineers and supervisors from consulting firms, local authorities and technical staff from contracting firms who are involved in the decision making process for mix types vs. location and/or laboratory technicians.

COURSE COST

\$795 per person + GST

(minimum numbers apply before a course is confirmed)

THE NATIONAL UTILITIES CODE: WHAT ON-SITE STAFF SHOULD KNOW

1 DAY

PRESENTER Fiona Knight

Are you complying with the National Utilities Code? It is compulsory for all utility operators, road managers and rail operators - but many organisations are not using it properly.

This course is designed specifically for contractors and utility network staff who install or maintain utility assets in the road and rail corridors to give an overview of the National Utilities' Code.

The course focuses on those parts of the Code that apply directly to utility operators and their agents. It also covers the handbook for workers in the road corridor: *Think Safe, Work Safe, Home Safe*.

Note: This course does not include all chapters of the Code.

MAJOR POINTS COVERED

- Key messages in the Code
- All requirements that apply to utility operators
- Roles and responsibilities of all the parties
- Health and safety responsibilities
- Applying to get access the corridors
- Locating assets in the transport corridors
- Site management
- Working in the corridors (Chapter 5)

ON COMPLETION, PARTICIPANTS WILL HAVE THE KNOWLEDGE TO

- Use their course notes to assist them when seeking access to or working in a transport corridor
- Understand those parts of the Code that apply specifically to utility operators and their agents
- Be familiar with their own specific responsibilities under the Code
- Comply with the Code as required by the Utilities Access Act 2010

WHO SHOULD ATTEND?

People who work on utilities on-site in road and rail corridors. Utility network operators and their agents/contractors and supervisors.

COURSE COST

\$495 per person + GST

(Minimum numbers apply before a course is confirmed)

In-house courses are available - POA

TIME MANAGEMENT

1 DAY

PRESENTER Megan Dawson

Stop working hard – work smarter and get more done. Learn how to do all this in one day.

You have as much time in a day as everyone else does. So what happens to it? Are you using it the way you want? Have you the capacity to work on your business as well as in it?

This very powerful seminar has participants construct their own personalised Time Management Plan according to their style and work environment.

You will, using a unique workbook:

- Examine how you manage your time during the day
- Identify ways that you use time effectively and ineffectively
- Determine specific ways you can improve your time management

TOPICS

- Improving Attitudes
- Setting Goals
- Establishing Priorities
- Analysing
- Planning
- Scheduling
- Curbing Interruptions
- Improving Meetings
- Handling Written Communications
- Delegation
- Conquering Procrastination
- Improving Team Time

ON COMPLETION, PARTICIPANTS WILL HAVE THE KNOWLEDGE TO

- Help you increase your productivity on the job and at home
- Help you enhance the quality of your work with less stress
- Give you a sense of personal satisfaction and accomplishment

WHO SHOULD ATTEND?

Everyone who wants to get more productive time out of each day, with less stress and more enjoyment.

PRE-COURSE WORK:

Attendees will complete an online assessment of their personal approach to time management.

COURSE COST

\$695 per person + GST

Includes pre-course assessment of your personal approach to time management.

(minimum numbers apply before a course is confirmed)

TRANSFORMING YOUR LEADERSHIP

1 DAY

PRESENTER Megan Dawson

"When I compared star performers with average ones in senior leadership positions, nearly 90% of the difference in their profiles was attributable to emotional intelligence factors rather than cognitive abilities."

Daniel Goleman, Harvard Business Review

Being a leader in your business or field can be tough. Managing people, making hard decisions and maintaining an effective work/life/family balance can be challenging. We can teach you many things about leadership, culture and teams. We can train you in conflict management, team building, and creative organisational solutions. We could also up-skill you in a variety of leadership competencies for greater and more effective results.

The truth is though, your emotional intelligence and internal awareness are critical in harnessing the power of who you are to transform your leadership. Without a healthy resourceful internal awareness you will never fully experience empowering freedom in leadership and the results you deeply desire.

The Be Leadership course works to grow your unique leadership internal awareness (iAQ®) in order to see leaders, and their teams, flourish in their roles, relationships and outcomes.

TOPICS

- What is Emotional Intelligence and Internal Awareness? What is your Emotional Intelligence level? How can outcomes be changed through greater internal awareness?
- Core motivators that drive your leadership style including resourceful and un-resourceful behaviours
- The internal language of leaders. How does self-talk affect outcomes?
- Critical conversations leaders have. When is the right time to speak about something in order to maximize outcomes?
- An Everything DiSC® profile identifying your communication style, motivators and stressors

ON COMPLETION, PARTICIPANTS WILL HAVE THE KNOWLEDGE TO

- Understand your own unique leadership style and emotional intelligence and how it affects outcomes
- Learn your core motivators as a leader, how they drive you towards behaviours, and identify when it is healthy to adapt them to maximise outcomes
- Maximise the effectiveness of your communication
- Understand your employees and team members better, their expectations and how to get the best out of them

WHO SHOULD ATTEND?

This course will be of assistance to leaders at all levels.

PRE-COURSE WORK

Attendees will complete an online assessment of their management style prior to the course.

COURSE COST

\$695 per person + GST

(minimum numbers apply before a course is confirmed)

UNDERSTANDING NZS3910:2013 CONDITIONS OF CONTRACT

2 DAYS

PRESENTER Fiona Knight

How well do you know the contents of NZS3910, which are the 'rules' for administering and managing civil engineering and building contracts?

This popular course, from a practical and 'hands-on' point of view will benefit Clients, Consultants and Contractors regarding how to manage and administer contracts and to understand their obligations and liabilities in terms of these General Conditions of Contract.

TOPICS

- A complete overview of NZS3910:2013 and the changes from NZS3910:2003
- Types of contracts
- Contractor and Client obligations
- Role of the Engineer / Engineer's representative
- Variations and how to value them
- Extensions of time
- Disputes
- Termination of contracts / sub-contracts
- Calculation of percentages for on-site, overhead and profit and rate per working day

ON COMPLETION, PARTICIPANTS WILL HAVE THE KNOWLEDGE TO

- Use course notes as an up to date reference for managing contracts
- Understand NZS3910:2013 as a whole
- Be familiar with different types of contracts and how the tender documents fit into the contract
- Understand the procedure for lodging claims
- Understand 'extension of time' and associated implications and costs
- Be able to value variations

WHO SHOULD ATTEND?

New and existing users of NZS3910, contract and project managers, supervisors, engineers'/contractors' representatives, as well as experienced personnel wishing to refresh their knowledge of NZS3910.

COURSE COST

\$795 per person + GST

(minimum numbers apply before a course is confirmed)

UNDERSTANDING NZS3916 AND NZS3917

½ DAY



PRESENTER Fiona Knight

Do you know the requirements for intellectual property contained in NZS3916:2013 (Design and Construct)?

Do you understand the different requirements for remedying defects under NZS3917: 2013 (Fixed Term)?

These are just two examples of the differences from NZS3910:2013.

This course, from a practical and 'hands-on' point of view, will benefit Clients, Consultants and Contractors wanting to know the differences between these two standards and NZS3910, the General Conditions of Contract. It is designed for people who are already familiar with NZS3910:2013.

TOPICS

- Overview of each standard NZS3916 and NZS3917
- Points of difference from NZS3910

ON COMPLETION, PARTICIPANTS WILL HAVE THE KNOWLEDGE TO

- Use course notes as an up to date reference for managing contracts
- Understand the key content of NZS3916:2013 and NZS3917:2013
- Be familiar with the similarities and differences with NZS3910:2013

WHO SHOULD ATTEND?

Contract and Project Managers, supervisors, engineers'/contractors' representatives, as well as experienced personnel wishing to improve their skills.

COURSE COST

\$395 per person + GST
(minimum numbers apply before a course is confirmed)

UNDERSTANDING THE CONSTRUCTION CONTRACTS ACT 2002

½ DAY



PRESENTER Fiona Knight

The Construction Contracts Act 2002 applies to all construction contracts that relate to the carrying out of construction work in New Zealand, whether the contract is in writing, oral, or a mixture of both, and whether it is for commercial or residential construction.

IT HAS FOUR KEY OBJECTIVES

- To protect retention money withheld under commercial construction contracts

- To help ensure a fair, balanced and appropriate payment regime
- To provide a fast and cost-effective adjudication process for people with disputes
- To provide enforcement mechanisms to recover any unmade payments

This course, from a practical and 'hands-on' point of view, will benefit Clients, Consultants and Contractors wanting to understand the key provisions of this Act, and how it applies to them.

TOPICS

- Key content of the Construction Contracts Act 2002 (CCA)
- What this means in real life
- How to submit payment claims under the Act
- The Adjudication process

ON COMPLETION, PARTICIPANTS WILL HAVE THE KNOWLEDGE TO

- Use course notes as an up to date reference on the CCA
- Be familiar with the key provisions of the Act
- How to use the CCA to get paid

WHO SHOULD ATTEND?

Contract and Project Managers, supervisors, engineers'/contractors' representatives, as well as experienced personnel wishing to improve their skills.

COURSE COST

\$395 per person + GST
(minimum numbers apply before a course is confirmed)

UNDERSTANDING THE NATIONAL UTILITIES CODE

2 DAYS

PRESENTER Fiona Knight

Are you complying with the National Utilities Code?

Its use is compulsory for all road and rail controlling authorities and utility network operators and their contractors for access to the road and rail corridors to install and maintain utility assets.

This popular course gives an intensive look at the Code from principles to specifics, and includes discussion on the roles and needs of the different parties. It is very interactive, including case studies and group discussions.

It is designed for corridor managers, utility operators, consultants and contractors and covers interpreting the Code and how to work better to comply with the requirements of the Utilities Access Act 2010.

MAJOR POINTS COVERED

- The context in which the Code operates
- Roles & responsibilities of all the parties
- Understanding the terms used in the Code
- General requirements of the Code
- Planning for new assets in the transport corridors
- Obtaining access to the corridors
- Reasonable conditions
- Procedures for working in the corridors
- Cost sharing

ON COMPLETION, PARTICIPANTS WILL HAVE THE KNOWLEDGE TO

- Understand the National Code of Practice for Utility Operators' Access to the Transport Corridors from cover to cover
- Understand the issues facing the different parties
- Use their course notes to assist them when seeking access to or working in a transport corridor
- Be familiar with their own specific responsibilities under the Code
- Comply with the Code as required by the Utilities Access Act 2010

WHO SHOULD ATTEND?

Any-one who has responsibilities for administering or complying with the Code: corridor managers, road and railway asset managers, administrators, utility network operators, consultants, managers of people working in the road corridor.

COURSE COST

\$795 per person + GST
(Minimum numbers apply before a course is confirmed)
In-house courses are available - POA

UNDERSTANDING THE TENDER PROCESS

1 DAY

PRESENTER Fiona Knight

Winning contracts and evaluating tenders is essential to the continuing viability of any contractor.

Winning contracts and evaluating tenders is essential to the continuing viability of any contractor/client. It is no longer just about the price and accurate calculations. Clients want an assurance that contractors fully understand their business, its needs and the specific job requirements. Winning contracts means understanding the issues and requirements at the procurement stage plus the skills and ability to write the tender: not just to be successful but to increase profits as well. To receive good tenders, clients must

provide meaningful contract documents for tenderers. If you wish to learn the tendering process from the perspective of both client and contractor, then this course is a must.

This course complements our new one-day course 'Preparing a Tender' which is a building the tender from first principles.

TOPICS

- What tendering is all about
- Deciding whether to tender
- The formal tendering process for both client and contractor
- Preparing to tender
- Quality (non-price) attributes
- Tender evaluation
- Types of contracts
- Issues in preparing tenders
- How to put your tender into words
- Pitfalls in tendering: how to win tender

ON COMPLETION, PARTICIPANTS WILL HAVE THE KNOWLEDGE TO

- Understand the purposes, types and methods of tendering and tender evaluation
- Prepare a well-written tender document
- Avoid common pitfalls seen in tenders

WHO SHOULD ATTEND?

Managers, engineers, supervisors and others responsible for preparing, evaluating and awarding tenders for civil construction and maintenance.

COURSE COST

\$520 per person + GST

(minimum numbers apply before a course is confirmed)

UNDERSTANDING QUALITY PAVEMENT CONSTRUCTION 2 DAYS

PRESENTER Ian Anderson

The current trend towards performance based specifications for roading and civil construction projects increases the need for contracting firms to understand the issues involved with pavement construction, especially material compaction.

This course provides an overview of theory and practice to assist team leaders and supervisors/forepersons to manage construction in the field.

TOPICS

- On-site preparation
- Excavation
- Identification of problem areas in subgrade
- Treatment of poor subgrade areas to achieve strength requirements
- Interpretation of material specifications
- Soil properties influencing compaction

- The relationship between maximum dry density (MDD) and optimum water content (OWC)
- Compaction behaviour of cohesive (clay) soils and non-cohesive (granular) materials
- Compaction assessment (in the field)
- Compaction equipment – types and application
- Spreading and placement of aggregate materials
- Grading, trimming, shaping and compaction of final surface
- Surface preparation

ON COMPLETION, PARTICIPANTS WILL HAVE THE KNOWLEDGE TO

- Prepare roads up to sealing standard (B/2 and B/3 specifications)
- Carry out on site preparation
- Understand the significance of compaction measurement criteria in specifications
- Excavate and prepare subgrade
- Grade, trim, shape and compact soil and aggregate layers
- Interpret compaction specifications and criteria [e.g. of TNZ M/4 (1995) and TNZ B/2 (1996)]
- Sweep basecourse and chipseal surfaces
- Achieve consistent compaction when preparing basecourse surfaces

WHO SHOULD ATTEND?

Supervisors, plant operators and field staff who are involved in earthwork and pavement construction projects.

COURSE COST

\$795 per person + GST

(minimum numbers apply before a course is confirmed)

WORKING WITH CONCRETE – BASIC SKILLS 1 DAY

PRESENTER Laurie Brown

Many minor roadwork and maintenance contract jobs require provision of concrete for drainage and utility surrounds, crossings, kerbing, driveways, footpaths, manholes, inspection chambers and kerb and channel construction. If poorly constructed and not up to specification, then repairs to defective concrete work will be both costly and time consuming; also poor finishing can present a perception of poor quality.

This course aims to give workers basic knowledge relating to preparing, placing and finishing minor concrete works and the equipment needed to produce quality results.

TOPICS

- The basic principles of concrete mix design and the production, placing and testing of concrete
- Different types of concrete add-mixtures and their properties-retarders, air entrainers, plasticisers etc.
- The basics of mixing and preparing concrete
- Preparation for and construction of both slipform and block kerbing
- Batching and mixing, transporting and handling of concrete
- Basic techniques for placing, finishing and curing concrete
- The basics of calculating and ordering materials for small scale concrete operations
- Types and methods of remedial works
- Construction of basic vehicle entrance crossings

ON COMPLETION, PARTICIPANTS WILL HAVE THE KNOWLEDGE TO

- Do a basic assessment of the materials, tools and equipment required for small on-site concreting works
- Prepare basic ground formations and construct formwork, boxing and shuttering to receive concrete
- Understand the type and quantities of concrete required, in accordance with the contract specifications
- Show a basic understanding of NZS 3124 in respect of the mixing, transportation, placement and curing of concrete
- Be aware of the different types of concrete mixes and their properties, including the use of add-mixtures
- Understand the basic requirements of preparing and laying kerb and channel
- Correctly carry out basic vehicle crossing, footpath or similar work

WHO SHOULD ATTEND?

All general workers – from roading, utilities and drainage contractors and leading hands involved in construction works requiring the production and use of concrete.

COURSE COST

\$495 per person + GST

(minimum numbers apply before a course is confirmed)





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NZIHT TRAINING PROGRAMME 2018

GLOSSARY OF COURSES

A			
Aggregates for Pavement Construction (1 Day)	25	Microsoft Project - Task Management (1 Day)	39
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B		New Zealand Certificate in Infrastructure Works (Level 3)	10
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Bitumen Plant and Tanker Operator (1 Day)	28	O	
Bitumen Rheology & Performance (1 Day)	29	Operation and Safe Use of a Road/Concrete Saw (1 Day)	41
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Bridge Inspection and Maintenance Procedures (2 Days)	29	Pavement and Rehabilitation Design (2 Days)	42
Bridge and Other Significant Highway Structures Inspection (2 Days)	30	Pavement Investigation, Design and Construction Testing (1 Day)	42
C		Pavement Surfacing (1 Day)	42
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Chipseal Design (2 Days)	30	Process Improvement (2 Days)	43
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Compaction - Operator Knowledge (0.5 Days)	31	R	
Compaction - Advanced Knowledge (0.5 Days)	32	Refresher - Level 1 STMS (1 Day)	44
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Conflict Management Skills (2 Days)	32	Road Condition Rating - Sealed Roads (1 or 2 Days)	44
Construction and Maintenance of Road Drainage Systems (1 Day)	33	Road Lighting Course A - to AS/NZS 1158 (1 Day)	45
Creating a Health and Safety Culture (1 Day)	33	Road Lighting Course B - Design Training (1 Day)	45
E		S	
Effective Leadership (2 Days)	33	Safety in Trenches (1 Day)	46
Environmental Risks of Construction (1 Day)	34	Slings, Lifting, Moving & Placing - with an Excavator or Loader (1 Day)	46
G		Stabilisation of Road Pavements - Fundamentals (1 Day)	47
Geomechanics for New Zealand Rooding (1 Day)	34	Successful Project Management (2 Days)	47
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Graduate Diploma in Engineering (Highways)(Level 7)	20	Survey and Set Out (1 Day)	48
I		T	
Inspecting Roads and Establishing Maintenance Needs (1 Day)	35	The Fundamentals of Asphalt Mix (2 Days)	48
Identify, Locate and Protect Services (1 Day)	35	The National Utilities Code - What On-site Staff Should Know (1 Day)	48
K		Time Management (1 Day)	49
Kerbside Collection Traffic Leader (0.5 Days)	36	Transforming Your Leadership (1 Day)	49
L		U	
Leading High Performing Teams (1 Day)	36	Understanding NZS3910:2013 Conditions of Contract (2 Days)	49
Level 1 - Basic Traffic Controller (TC) (1 Day)	37	Understanding NZS3916 and NZS3917 (0.5 Days)	50
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M		Understanding the National Utilities Code (2 Days)	50
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Managing Flooding And Erosion Risks From Rivers (1 Day)	38	Understanding Quality Pavement Construction (2 Days)	51
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Camelot Motor Lodge

and Conference Centre

Palmerston North



The Camelot Motor Lodge is well situated in a quiet location close to the city centre, and within a couple of minutes' walk to the cbd, restaurants, cafés and entertainment.

We offer a variety of units:

- studio suites with double air/spa baths & showers,
- studios with access facilities,
- one bedroom suites with double air/spa baths & showers,
- two bedroom apartments with spacious luxury.

All units are beautifully appointed, with well-equipped kitchens and the ambience of plunger coffee. The bathrooms have the luxury of heated towel rails and the convenience of hair dryers.

Breakfasts are available, served to the units, and meal chargeback options are available from a number of local restaurants.

Our superior, air conditioned conference room seats up to 40 theatre style. Excellent catering is available with a range of menu options.

Visit our website at www.camelotmotorlodge.co.nz for further information and to book on line.

Camelot Motor Lodge
295 Ferguson Street, Palmerston North
Phone 06 355 4141, Fax 06 357 7344
Reservations Freephone 0800 321 295
Email camelotmotorlodge@xtra.co.nz

