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**Lecturer Guide for the delivery of:**

**Site Survey Preparation and Analysis**

**(Level 5)**

**CONTENTS:**

* **Preamble**
* **Course descriptor**
* **Delivery schedule**
* **Course Assessment**
* **Focus areas**
* **Indicative content based on unit standards**
* **Glossary of terms**

**Version 1.0**

**Date: November 2015**

# 1 Preamble

Site Survey Preparation and Analysis (Level 5) is a course in the NZCM programme taught in semester one. As a Level 5 course, it is intended to contribute to the following graduate profile.

|  |  |
| --- | --- |
| **Graduate Profile Attributes** | **Capabilities:****\* = emerging capabilities****\*\* = developing capabilities****\*\*\* = developed capabilities** |
| Apply a broad knowledge of the structure and structural principles for building work including foundations, substructure, the envelope and the interior, and passive fire protection systems for medium and large buildings | \*\* |
| Develop construction plans and methodologies, for medium buildings | \*\* |

**Student Educational Journey**

This is a Level 5, 15 credit course.

*Statement to be completed by Design Development Team of the intention of the student journey through the course.*

**Learning and Assessment Activities**

Learning and assessment activities should be contextualised and embedded into the CM strand.

# 2 Course Descriptor

|  |  |
| --- | --- |
| **CIBC 5022:** | **Site Survey Preparation and Analysis** |
| **Course number:**  | CIBC 5022 | **Level:** | 5 | **Credits:** | 15 |
| **Main programme:** | New Zealand Diploma in Construction |
| **Strand:** | Construction Management | **Total Learning hours:** | 150 |
| **Compulsory/Elective:** | Compulsory | **Hours directed:** |  |
| **Other programmes:** |  | **Hours self-directed:** |  |
| **Prerequisites:** | Nil |
| **Co-requisites:** | Nil |
| **Restrictions:** |  |
| **NZSCED field of Study:** | 040305 | **Mode of delivery:** | Blended |

**NZQA Level Descriptor**

|  |  |  |  |
| --- | --- | --- | --- |
|  | ***Knowledge*** | ***Skills*** | ***Application*** |
| *5* | *Broad operational or technical and theoretical knowledge within a specific field of work or study* | *Select and apply a range of solutions to familiar and sometimes unfamiliar problems**Select and apply a range of standard and non-standard processes relevant to the field of work or study* | *Complete self- management of learning and performance within defined contexts**Some responsibility for the management of learning and performance of others* |

**Course aim**

To enable the student to develop the skills and knowledge to assist and conduct site surveys and analysis.

|  |
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| **Learning Outcomes**On successful completion of this course the student will be able to**:** |
| 1. Describe site survey preparation and setout
 |
| 1. Discuss and review information for contour plan preparation
 |
| 1. Generate graphical communications relevant to construction
 |

**Indicative curriculum (**May include but are not limited to)

*Site survey preparation and setout:* Overview of types – boundary, construction control, progressive. Site plan preparation including levels and briefing notes on boundary survey and construction control survey requirements. Survey instruments – dumpy level, theodolite, laser. Measurements – survey marks, linear and angular, 90 degree angles, ground levels, changing station, setting levels, controlling verticality. Recording and accuracy.

*Contour plan preparation:* overview of calculations and drawings – reduced levels, contour plans, volumes. Drawing to scale. Contour plan – grid pattern, spot levels, grid heights, plotting, gradients.

*Graphical communications relevant to construction:* could include site survey sketches, concept or working drawings. Scaled conventions. Projections. Identification of the difference between structural, architectural and working drawings.

**Assessment**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **No.** | **Assessment Type** | **Pass criteria** | **Weighting** | **Outcome assessed** |
|  | Portfolio of Evidence | Overall Grade C- to A+ | See notes | All LOs |

Unless otherwise indicated above, the weighting of the overall assessment is equally distributed across learning outcomes. A variety of assessment tasks may be used to ensure that all learning outcomes are adequately demonstrated to achieve the graduate profile of the qualification.

The contents of students’ portfolios may typically include evidence of achievement from assignments, projects, tests, exams, formative assessments, peer assessments, self and group assessments.

Assessment judgements are guided by the aim statement of the course descriptor, by national consistency arrangements, by the assessment policy and practice of the delivering institution, and by level-related criteria published by NZQA.

**Learning and teaching**

The learning and teaching for the course may use a variety of models according to the policies and practice of the delivery institution. They may include on-campus, on-line, work-based, independent, and blended learning.

Learning activities for topics may typically include practical/workshop/lab sessions, lectures, tutorials, field trips, group work, visiting specialists, computer simulations, web technologies, self-directed learning

**Learning resources**

Recommended texts, industry documents, websites and other resources will be published by the learning management systems of each delivery institution.

**Summary of Changes**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| *Version No.* | *Date of Change* | *Effective from* | *Approved by* | *Description of change* |
|  |  |  |  |  |

# Delivery Schedule

The delivery hours and teaching spaces in the table below are extracted from the Delivery Schedule Spreadsheet.

Refer to the Learning and Teaching section of the Course Descriptor.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **On Campus** | **Online Learning** | **Work Integrated Learning** | **Independent Learning** | **TOTAL HOURS** |
| Flat Floored Teaching Space | Labs - e.g computing education, e.g. learning software useage. | Synchronous: Collaborate, Echo 360 etc. | Asychronous: Web-based and Moodle activities | Authentic Learning: reflective real-life demands in industry - including assessment | Work based or Work Integrated Learning - learning achieved through activities that are based on, or derived front he context of work. E.g learning in the workplace. | Self Directed Learning |
| 18 | 10 | 14 | 16 | 4 | 10 | 78 | 150 |

# Concentrated Focus Areas

**Critical areas of learning:**

Identify a minimum of three threshold concepts/tasks which students must be able to achieve.

Areas that through experience, students typically need more support and tuition include:

*(The Development Team to list topics or areas)*

# Course Assessment

Refer to assessment section in Course Descriptor.

*Example only – to be completed by the Development Team*

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **No.** | **Assessment Type** | **Pass criteria** | **Weighting** | **Outcome assessed** |
|  | *Quiz* | *Overall Grade C- to A+* | *(tbc)* | *1 (tbc)* |
|  | *Assignment* | *Overall Grade C- to A+* | *(tbc)* | *2,3 (tbc)* |
|  | *Final Test* | *Overall Grade C- to A+* | *(tbc)* | *4 (tbc)* |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **No.** | **Assessment Type** | **Pass criteria** | **Weighting** | **Outcome assessed** |
|  |  |  |  |  |
|  |  |  |  |  |
|  |  |  |  |  |

# Indicative Content

This section is based on unit standards. Please use these as a guide for the development of this course.

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| --- |
| **27162 Demonstrate knowledge of and create technical sketches for construction** |
| Purpose:People credited with this unit standard are able to: demonstrate knowledge of technical sketching for construction, and create simple technical sketches for construction from a given brief. |
| **Outcome** | **Evidence** |
| Demonstrate knowledge of technical sketching for construction. | Technical sketches are described in terms of purpose. |
| Lines used on construction sketches are identified and their purpose described.Range: outlines, dimension lines, hidden detail, centre break, reference lines. |
| Symbols used on construction sketches are identified and their purpose described.Range: symbols indicating – materials, doors, windows, fittings and furnishings. |
| Sketching methods are identified and described in terms of their practical application.Range: one-point perspective, two-point perspective, isometric, oblique; third angle orthographic projection. |
| Create simple technical sketches for construction from a given brief. | Job requirements are obtained and verified, and sketching technique is selected in accordance with workplace practice. |
| Sketches are created in accordance with job requirements.Range: proportion, detail, two dimensional, three dimensional. |
| Sketches communicate information relevant to the construction project. |

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| **27154 Complete survey requirements for the setout of medium buildings** |
| Purpose:People credited with this unit standard are able to: prepare to perform surveying for the accurate setout of a medium building; use surveying instruments for the setout of a medium building; use survey data to provide other building site information; and establish base data and prepare a contour plan. |
| **Outcome** | **Evidence** |
| Prepare to perform surveying for the accurate setout of a medium building. | Types of survey required for medium buildings are identified and responsibilities are determined.Range: boundary survey, construction control survey, progressive surveying. |
| A site plan showing levels is prepared according to the constraints of the site. |
| Briefing notes on the requirements for the boundary survey and the construction control survey are prepared and the level of accuracy established. |
| Measuring and recording systems are selected in accordance with site requirements. |
| Use surveying instruments for the setout of a medium building. | Surveying instrument is set up and adjusted in accordance with manufacturer’s instructions.Range: dumpy level, theodolite, laser. |
| Requirements for accuracy of measurements are established in accordance with site requirements. |
| Surveying instrument is used to take measurements for a run of levels in accordance with site documents and manufacturer’s instructions.Range: setting up over a survey mark, using survey marks and profiles, taking linear and angular measurements, turning 90 degree angles, finding ground levels, changing station, setting levels, controlling verticality. |
| Surveying instruments are checked for accuracy in accordance with manufacturer’s instructions. |
| Use survey data to provide other building site information. | Calculations and drawings are prepared in accordance with tolerances stipulated in site documents.Range: reduced levels, contour plans, volumes. |
| Establish base data and prepare a contour plan. | The site is represented on a plan grid pattern in accordance with site documents. |
| Grid heights are calculated from spot levels and a contour plan is drawn with contour heights at set levels in accordance with site documents. |
|  | Plans and cross sections are plotted and drawn to scale, and gradient is determined in accordance with site documents. |

# Glossary of Terms

***Construction Planning*** refers to understanding what has to be built, then establishing the right method, the right plant and right labour force to carry out the work safely and to the quality required, in the most economical way to meet the client requirements.

***Construction Programme*** refers to a time-related schedule based on the construction planning decisions.

***Estimating*** covers the completion of initial preliminary estimates and the build-up of costings and prices for tendering purposes.

***Large Buildings*** can include domestic and commercial buildings that are not covered by the definition of small scale consented buildings.

***Medium Buildings*** are light to medium weight commercial or industry buildings up to three levels above ground which utilise commercial or industrial materials construction techniques and services.

***Quality Assurance*** requirements mean all the planned and systematic activities that meet a recognised and industry accepted set of standards and will provide confidence to clients and other stakeholders that the construction project will fulfil requirements for quality.

***Schedule of Quantities*** is a list of building work items with quantities set beside them.

***Site Safety Plan*** is defined as a building and construction site-specific document that demonstrates and organisation’s means of compliance with the Health and Safety in Employment Act 1992 and includes, but is not limited to the following:

* Assignment of responsibilities for on-site implementation
* Hazard identification methods
* Accident investigation and report methods
* Site emergency procedures
* Site communication strategy
* Strategy for the coordination of on-site trade activities
* Site audit procedures

***Small Scale Consented Buildings*** are small scale, light weight buildings, generally of non-specific design, and of domestic scale with light weight framing and/or concrete or concrete masonry construction.

***Specifications*** refer to documented instructions and may include any of the following: manufacturer’s specifications, recommendations or technical datasheets, material specifications, project specific specifications from a specialist source such as an architect, designer, engineer or supervisor, site or work specific requirements.

***Trade sections*** are a breakdown of individual trades involved in a building project, outlining the input into the construction of a building.