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| Module Title: | Surveying and Recording 1 |
| Language of Instruction: | English |
| Credits: | 5 |
| NFQ Level: | 6 |
| Module Delivered In | 2 programme(s) |
| Teaching & Learning Strategies: | Learning shall be through: lectures, Demonstrations, Tutorials, Practical's & project feedback. Intensive group studio-based learning, Site visits to live projects to observe the construction site in operation. learning by doing for practical's eg setting up a level, creating a site grid, site surveys measured surveys of rooms and building elements such as stairs etc. and report writing to record findings. |
| Module Aim: | <p>Aims 1. To introduce students to the history and development of surveying from ancient civilisations to present day. 2. To introduce the concept of contours & maps in relation to the site/ ground. Including site suitability tests & concept of ground/ soil investigations. To introduce the concepts of ordnance survey maps GPS, GIS, maps, vector maps & raster maps. To demonstrate how maps are utilised in planning for development plans and by design professionals in the construction industry. 3. To introduce students to the concepts of levelling, the use of EDM, Theodolites and Total stations. To demonstrate the process of completing a level survey and book, record and mathematically check the results using the quick check and complete check methods. To introduce students to the process of accurately setting up the dumpy level and check its accuracy by using and recording the two-peg test. 4. To introduce students to the principles of maps, scale, ordnance survey, GPS, GIS. To demonstrate the principles of levelling and calculating ground/ reduced levels on a site. To demonstrate how this data can be used to create and calculate and record contour maps and drawings for a site. 5. To introduce students to the process of calculating and recording areas and volumes of regular and irregular areas and volumes.</p> |
| Learning Outcomes | |
| <i>On successful completion of this module the learner should be able to:</i> | |
| LO1 | To understand the history and development of surveying from ancient civilisations to present day. |
| LO2 | To understand of the concept of contours & maps in relation to the site/ ground. Including site suitability tests & concept of ground/ soil investigations. To understand the concepts of ordnance survey maps GPS,GIS, maps, vector maps & raster maps. To understand how maps are utilised in planning for development plans and by design professionals in the construction industry. |
| LO3 | To understand the concepts of levelling, the use of EDM, Theodolites and Total stations. To have the ability to carry out a level survey and book, record and mathematically check the results using the quick check and complete check methods. To have the ability to go through the process of accurately setting up and using the dumpy level and check its accuracy by using and recording the two-peg test. |
| LO4 | To apply the principles of maps, scale, ordnance survey, GPS, GIS. To understand and apply the principles of levelling and calculating ground/ reduced levels on a site. To utilise this data to create and calculate and record contour maps and drawings for a site. |
| LO5 | To calculate and record areas and volumes of regular and irregular areas and volumes. |
| Pre-requisite learning | |
| Module Recommendations | |
| <i>This is prior learning (or a practical skill) that is recommended before enrolment in this module.</i> | |
| No recommendations listed | |
| Incompatible Modules | |
| <i>These are modules which have learning outcomes that are too similar to the learning outcomes of this module.</i> | |
| No incompatible modules listed | |
| Co-requisite Modules | |
| No Co-requisite modules listed | |
| Requirements | |
| <i>This is prior learning (or a practical skill) that is mandatory before enrolment in this module is allowed.</i> | |
| No requirements listed | |

Module Content & Assessment

Indicative Content

1.
To introduce students to the history and development of surveying from ancient civilisations to present day.
2.
To introduce the concept of contours & maps in relation to the site/ ground. Including site suitability tests & concept of ground/ soil investigations. To introduce the concepts of ordnance survey maps GPS, GIS, maps, vector maps & raster maps. To demonstrate how maps are utilised in planning for development plans and by design professionals in the construction industry.
3.
To introduce students to the process of accurately setting up and using the dumpy level and check its accuracy by using and recording the two-peg test.
4.
To introduce students to the concepts of levelling, the use of EDM, Theodolites and Total stations. To demonstrate the process of completing a level survey and book, record and mathematically check the results using the quick check and complete check methods.
5.
To introduce students to the principles of maps, scale, ordnance survey, GPS, GIS. To demonstrate the principles of levelling and calculating ground/ reduced levels on a site. To demonstrate how this data can be used to create and calculate and record contour maps and drawings for a site.
6.
To introduce students to the process of calculating and recording areas and volumes of regular and irregular areas and volumes.

| Assessment Breakdown | % |
|----------------------------------|--------|
| Continuous Assessment | 10.00% |
| Project | 15.00% |
| Practical | 15.00% |
| End of Module Formal Examination | 60.00% |

Continuous Assessment

| Assessment Type | Assessment Description | Outcome addressed | % of total | Assessment Date |
|-----------------|---|-------------------|------------|-----------------|
| Written Report | Prepare a written and typed report that investigates process of levelling for a construction project and investigate the potential use of EDM, Theodolites and Total stations. Source relevant equipment. Demonstrate an understanding of how these instruments are used in practice. | 3 | 10.00 | n/a |

Project

| Assessment Type | Assessment Description | Outcome addressed | % of total | Assessment Date |
|-----------------|---|-------------------|------------|-----------------|
| Project | Contour Survey & areas and volumes. 1. Create a site grid with reduced levels. Mathematically calculate contours for the site, to create an accurate topographical survey of the site. 2. Calculate a series of regular and irregular volumes and areas in relation to the site and proposed building. Prepare a written and typed report that shows calculation methods for the set questions. | 1,2,4,5 | 15.00 | n/a |

Practical

| Assessment Type | Assessment Description | Outcome addressed | % of total | Assessment Date |
|-----------------------------|---|-------------------|------------|-----------------|
| Practical/Skills Evaluation | Report: Set up a dumpy / engineers' level and write a report to explain the process. Complete a two-peg test and write up a report to explain the process and checking accuracy. | 1,3 | 7.50 | n/a |
| Practical/Skills Evaluation | Complete a level survey for a given site. Calculate reduced / ground levels for a given set of points. Produce a series of sketches and scaled drawings and diagrams that records the level survey. | 1,3 | 7.50 | n/a |

End of Module Formal Examination

| Assessment Type | Assessment Description | Outcome addressed | % of total | Assessment Date |
|-----------------|---|-------------------|------------|-----------------|
| Formal Exam | Final Exam. The examination will be formed by a series of questions based on the learning outcomes 1,2,3,4,5 & 6. | 1,2,3,4,5 | 60.00 | End-of-Semester |

Module Workload

| Workload: Full Time | | |
|----------------------------|--------------------|--|
| <i>Workload Type</i> | <i>Frequency</i> | <i>Average Weekly Learner Workload</i> |
| Laboratory | 12 Weeks per Stage | 1.00 |
| Lecture | 12 Weeks per Stage | 2.00 |
| Practicals | 12 Weeks per Stage | 1.00 |
| Tutorial | 12 Weeks per Stage | 1.00 |
| Estimated Learner Hours | 12 Weeks per Stage | 5.42 |
| Total Hours | | 125.00 |

Module Delivered In

| Programme Code | Programme | Semester | Delivery |
|----------------|---|----------|-----------|
| CW_CMARC_B | Bachelor of Science (Honours) in Architectural Technology | 1 | Mandatory |
| CW_CMART_D | Bachelor of Science in Architectural Technology | 1 | Mandatory |