**CES1105: Practice at Chainman level**

| LH | PH | TH | CH | WTM | WE | WCM | CU |
|---|---|---|---|---|---|---|---|
| 0 | 120 | 0 | 60 | 100 | 60 | 40 | 4 |

**Course description**

This course is a basic to the profession. It uses what has been learned in CES1101, CES1102 and CES1104. Practice should come instinctively, as with riding a bicycle. It must be flexible to cater for an international private sector (mostly) clientele. The practice of surveying cannot be taught by handouts and assessed by written examinations, nor made to comply with a single method of record keeping.

The chainman is characterised by having the right people and right equipment and materials in the right place at the right time.

The student groups are taught how to carry out tasks and then supervised as they work on their own.

**Objectives**

- The purpose of this course is to give practice with the instruments that can be handled at this level in the field
- To teach a methodical approach to field work at this level
- Face the problem of collecting field data relevant to a civil engineering proposal.
- Tackle some practical issues in the field at chainman level
- Promote practical creativity and vision.

**Course Outline**

- Timesheets for calculation of speed of performance. The necessity for filling in field sheet headings
- Experience Book, to record experiences in writing
- Measuring in the three dimensional world to produce two dimensional scaled plan drawings
- Caring for and using different types of tapes. Tape manipulation
- Use of Abney level, optical square and compass [60CH]
- Flat and catenary taping with their different booking methods and reductions
- Checks against gross error
- Calculation of accuracy obtained
- Practice in detailing with offsets, tie lines and sight lines
- Drawing of detail to scale.

**Learning Outcomes**

On completion of the course, the student should be able to:

- Write up the field sheets orderly and legibly with reading in tabulated form.
- Carry out simple tape site surveys efficiently and speedily, including foreseeing what is to be done next and having the equipment in the right place ahead of time
- Be familiar with the instrumentation.
- Reduce for slope in the tape readings
- Plot the control to scale, determining accuracy and adjusting small misclosures
- Plot Engineering field data onto the drawing
- Carry out field checks