ENGINEERING TRIPOS Part IIA

Area 4 Extension Activity

An ex-ExA student putting his skills (and the Department's equipment) to use on a recent expedition to Greenland, measuring glacier movement

INTRODUCTION

Land Surveying (now sometimes called Geomatics) is an important skill for all Civil Engineers, as it ensures that roads, buildings, tunnels and bridge foundations are built in the correct place. It is also a skill that many other engineering students find both interesting and useful – and one which Area 4 students would certainly be expected to possess, when working for Civil Engineering firms during vacations.

The Area 4 ExA gives a basic grounding in Surveying. Further experience can then be gained by choosing the Part IIA Civil Engineering Project in the Easter term, and/or by choosing Module 4M9 in the fourth year.

OBJECTIVE

The purpose of this ExA is to learn how to use surveying instruments and techniques to establish the exact positions (National Grid co-ordinates, and orthometric heights) of some existing survey stations, and then to set out some additional ones at predetermined positions. Topics covered are:

1 Principles of Surveying
2 Basis of the Ordnance Survey Grid
3 Planning and computing a Traverse
4 Simple adjustment of errors
5 Planning setting out
6 Use of instruments: Total Station, optical level
7 Fieldwork: traversing, leveling, setting out

ARRANGEMENTS

Students will work in groups of 4 - 6, and the course will take place over a continuous 2½ day period **after the end of lectures in the Lent term**: from 2pm - 6pm on the last Wednesday of full term, 9am - 6pm on Thursday, and 9am - 4pm on Friday. If numbers require it, an additional course will be run at the end of the Michaelmas term.

Further details about surveying in the Engineering Tripos, and a booking sheet for this ExA, can be found on the Civil Engineering notice board in the Structures Gallery (Inglis building, mezzanine floor).

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