

Engineering Tripos Part IIA Project, GD1: Constructionarium, 2019-20

Leader

[Dr I Brilakis](#) [1]

Timing and Structure

Michaelmas Term preparation: 1 full day at end of Michaelmas Term. Lent Term preparation: 1 full day at start of Lent Term ; 1 afternoon during Lent term; Easter Term Timing: 1 full day in Easter term plus one week field course.

Prerequisites

3D3, 3D4, and 4D16 useful; Part IIA Surveying Engineering Area Activity required

Content

This project involves the construction of two scaled-down versions of real-world structures (these could be buildings, bridges, nuclear power stations, etc.) at the Construction Industry Training Board (CITB) site. Each student will be in a team of up to 20 students, working with a contractor (Laing O'Rourke Plc.) and a consultant (Ramboll). This project is limited to 40 students.

The project is designed to provide students with a practical introduction to construction techniques commonly used in practice as well as construction project management. Because of the requirement to stay away from Cambridge during the construction period, students may only take GD1 Constructionarium with either GD2 Structural Modelling or a European language project.

Constructionarium is a fantastic opportunity for Civils students where they get to learn important skills using a hands-on realistic construction project exercise. It is also the case that, while the credit available for the project is the same as for all of the others, the overall time commitment is greater - but its popularity with previous cohorts indicates that it is well worth taking the opportunity.

Each team of students will build one structure. These are quite elaborate and could take the form of, for example, a floating oil platform rig, a bridge that has to be launched across a gap, a jetty, or a transmission tower.

Students will choose, or be allocated, a role within the team. The team members then have to work together to decide how the structure is to be built and to fabricate the necessary elements to build it. Some of these may have been prefabricated but many will have to be built on site. Some equipment will be available on site. Engineers from the Contractor and the Consultant will assist but it will be the responsibility of the students to produce a safe, workable and economic scheme, and then to put it into action. The marking will be on an individual basis, based on two individual reports and individual project contribution; students will be awarded (or lose) marks depending on how well they contribute to the team effort. These marks will be awarded by CUED staff but will take account of information from the Consultant and the Contractor.

Accommodation will be provided at the CITB site in Norfolk in segregated male/female rooms from Sunday 17th May to Friday 22nd May 2020 inclusive. Attendance will be compulsory and students will not be allowed to leave the site in that period. A coach will take students to/from Norfolk. Constructionarium Ltd charge a total of about £500 per student for the residential week, however, CUED secured sponsorship for 54% of these costs. The students are required to pay (£270) each from other sources, including Colleges, plus an extra fee of £30 for the use of construction-grade boots. This payment is mandatory and a place in this module is not confirmed until payment has been made. Payments are required to be made by Friday 25th January 2019. Payments can be made

through the link [Online sales](#) [2]

There is a dedicated CUED Constructionarium Moodle web page that provides more information including details on projects completed by previous cohorts.

More general information is available on the webpage maintained by Constructionarium Ltd (<http://www.constructionarium.co.uk> [3]).

Induction, design and planning sessions:

Michaelmas Term: Friday 6 December 2019, all day.

Lent Term: Wednesday 15 January 2020, all day; Wednesday 12 February 2020, afternoon.

Easter Term: Thursday 14 May 2020, all day.

On-site at Constructionarium:

Sunday 17 May 2020 - Friday 22 May 2020.

Coursework

Coursework	Due date	Marks
Preliminary <i>Individual</i> report	4pm, Tuesday 10 March 2020	15
Contribution to group work project (awarded for activities on site)		40
final individual report:	4pm, Thursday 28 May 2020	25

Examination Guidelines

Please refer to [Form & conduct of the examinations](#) [4].

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Links

[1] <mailto:ib340>

[2] <https://onlinesales.admin.cam.ac.uk/product-catalogue/products/schools-faculties-departments-and-institutions/departments-of-engineering/engineering/gd1-constructionarium-fee>

[3] <http://www.constructionarium.co.uk>

[4] <https://teaching22-23.eng.cam.ac.uk/content/form-conduct-examinations>