ENGINEERING TRIPOS Part IIA

Extension Activity: STIMULUS – School Teaching Opportunities in STEM

Open to students in all Engineering Areas

INTRODUCTION

This ExA provides an opportunity to gain hands-on experience with Science, Maths, Computing and Engineering education. Students will help with teaching a STEM subject in a local school, at any level from Primary to Sixth Form. A further objective is to reflect on how to improve awareness of Engineering and Technology, via the existing teaching of science, maths and coding in schools.

School placements will be arranged via the STIMULUS student volunteer programme run by the Centre for Mathematical Sciences, and may run in the Michaelmas or Lent Terms (or both). Placements normally run for 5-6 weeks of a university term (and beyond if you wish, noting that one of our weeks is school half-term), spending 1.5 – 2 hours in school each week. For the first part of the ExA, a minimum of 8 hours in class should be logged, and signed off by your school contact at the end of the placement.

The second part of the ExA is open-ended and flexible, being an individual investigation into STEM teaching in schools, supported by literature in educational research, as appropriate. For example, this could involve:

- reflecting on your placement, identifying good practice or missed opportunities in teaching science, maths or coding;
- reviewing curriculum specifications and the teaching resources, identifying existing links to Engineering, or proposing possible resources that set the current subject content in an applied Engineering context;
- running a questionnaire or face-to-face interviews with staff and pupils, to explore their awareness of Engineering and understanding of what engineers do.

For this part of the ExA, all students complete a short report on their individual investigation.

The total time spent on the ExA, including training sessions with STIMULUS, class time and report writing, should be 20 hours.

ARRANGEMENTS

To undertake this ExA, students should:

(1) Read the general information and joining instructions on the STIMULUS website:
https://stimulus.maths.org/content/volunteers, https://stimulus.maths.org/content/volunteers/joining-stimulus

(2) Register online by the **deadline of midnight, Friday of week 1 in the Michaelmas Term**.

[NB Late applicants will normally not be accepted on the ExA].

(3) Confirm that they have registered with STIMULUS by **email to Dr Shercliff** (hrs@eng.cam.ac.uk), stating name and college, and confirming the intention to count this as their ExA. (and select it on COMET in Michaelmas wk1).

(4) attend **compulsory training** with STIMULUS during the following calendar week (to comply with legal aspects of safeguarding, and to receive advice on best practice in working with schools) – outline timetable at:
https://stimulus.maths.org/content/volunteers

[NB Early registration is possible in June, to complete the necessary training and start a placement in wk 0 or 1]

During online registration with STIMULUS, you will need to indicate your preferences for:

- term: Michaelmas/Lent/both;
- subjects: Physics, Chemistry, Biology, Maths, Design/Technology, Coding, Computing;
- age groups: Primary, 11-16, 6th form;
- ability to travel within Cambridge: bike etc;
- availability: each weekday, blocks between 9am – 4.30pm (in most cases in IIA this will mean afternoons).

Please be **as flexible as possible** with your preferences, to make it easier for STIMULUS to match everyone to a school.

Once you have been notified of your placement, briefings will be arranged with Dr Shercliff to discuss possible options for your individual investigation (which may of course evolve, depending on your experience in school).

The deadline for the final report will be midnight on the Friday two weeks after the end of the Lent Term (via Moodle).

Dr Hugh Shercliff (hrs@eng.cam.ac.uk)
June, 2019