Engineering Tripos Part IA, The Engineer in Society, 2021-22

Coordinator

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Lecturer

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Timing and Structure

Eight pre-recorded 25-30 minute videos of presentations and interviews with guest speakers from industry, plus Q&A session on MS Teams with module leader. Full details of timings are available via MS Teams channel 'The Engineer in Society MT2021'.

Aims

The aims of the course are to:

- Introduce students to the economic, social and industrial context within which engineers work.
- Seek to provide a sense of the 'bigger picture' within which any engineering-related organisation operates.
- Show why an understanding of this context is important and to raise awareness of the non-technical competences that engineers need to develop in order to be successful.

Objectives

As specific objectives, by the end of the course students should be able to:

- Appreciate the economic, social and industrial contexts of engineering.
- Understand how these contexts influence engineering decisions.
- Produce a non-technical report on topics related to these contexts.

Content

1. Introduction - what engineering really is

2. Context, and Innovation (Part 1)

3. Innovation (Part 2)

4. How to lead change and save the planet

5. Engineering ethics - How to make difficult decisions

6. How to engineer better healthcare - Lessons from COVID (Part 1)

7. How to engineer better healthcare - Lessons from COVID (Part 2)

8. Module summary, key lessons and advice for courswork

ASSESSMENT

To complete the Engineer in Society module you must write a report of approximately 1000 (+/- 10%) words over

the Christmas vacation. It must address ONE of the three topics below. The report must be submitted by 16:00 on Friday 21st January 2022 via the Moodle website for this module. The aim of this task is to give you experience in preparing a professional response to non-technical questions – something that you will be required to do throughout your career.

Write a report on ONE of these three topics:

1. Select one of the biggest sustainability or development challenges that could be solved by engineers and discuss why it has not already been solved.

2. Discuss the ethical challenges facing engineers seeking to develop and deploy technologies such as machine learning/AI, medical robotics or autonomous vehicles.

3. Describe some examples of how engineers have addressed COVID-related challenges, and explain how these illustrate that ‘technology is necessary but not sufficient’ when addressing complex problems.

Further information is available via the Moodle site for this module.

REFERENCES

Additional on-line resources for this module will be provided via Moodle.

Examples papers

Please see the **Booklist for Part IA Courses** [2] for references for this module.

Examination Guidelines

Please refer to Form & conduct of the examinations [3].

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Links
[1] mailto:thwm100@cam.ac.uk
[2] https://www.vle.cam.ac.uk/mod/book/view.php?id=364071&chapterid=42051
[3] https://teaching.eng.cam.ac.uk/content/form-conduct-examinations