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The Open University

Statement of participation

Tithi Bose

has completed the free course including any mandatory tests for:

Engineering: The nature of problems

This 40-hour free course discussed the approaches taken by engineers to a range of engineering problems. Or as they are often called, 'challenges'.

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www.open.edu/openlearn

This statement does not imply the award of credit points nor the conferment of a University Qualification.
This statement confirms that this free course and all mandatory tests were passed by the learner.

Please go to the course on OpenLearn for full details:
https://www.open.edu/openlearn/science-maths-technology/engineering-technology/engineering-the-nature-problems/content-section-0

COURSE CODE: **T207_1**

Engineering: The nature of problems

https://www.open.edu/openlearn/science-maths-technology/engineering-technology/engineering-the-nature-problems/content-section-0

Course summary

Engineering is about extending the horizons of society by solving technical problems, ranging from the meeting of basic human needs for food and shelter to the generation of wealth by trade. In this free course, Engineering: The nature of problems, we learn that engineers see the problems more as challenges and opportunities than as difficulties. What they appear to be doing is solving problems, but in fact they are busy creating solutions, an altogether more imaginative activity.

Learning outcomes

By completing this course, the learner should be able to:

- view solutions as belonging to particular categories, broadly classified as: innovation by context; innovation by practice; routine
- see how external factors affect engineering projects, and appreciate the range of engineering involved in meeting the basic needs of our society
- recognise and apply a range of problem-solving techniques from each stage of the engineering design cycle, to include the following: physical modelling; mathematical modelling; iteration; use of reference data; refining an engineering specification
- identify when models are likely to be useful and when they are no longer valid
- recognise and distinguish between the following technical terms: differential equation; simultaneous equation; boundary condition; constraint; finite element analysis (FEA); mathematical model; physical model; prototype; demonstrator; anthropometric; ergonomic; product specification; functional specification.

Completed study

The learner has completed the following: