

## StudentShapers Recruitment: Calling all Design Engineering students

*Student-led transition to professional finite element modelling in design engineering*

Bursary: £330/week for 8 weeks.

**Who should apply:** Students enrolled on the Design Engineering MEng programme with the knowledge of the finite element method (FEM) and expertise in using a commercial FEM package should apply.

**Campus/Location:** South Kensington, Dyson School of Design Engineering

### Project details:

*Computational modelling is a powerful tool that allows design engineers to iterate through their design in-silico, thus reducing the prototyping costs and opening the door to nearly unlimited design variations. The Finite Element Method (FEM) is specifically a versatile method that suits many applications. The FEM module is a core module in design engineering. The design of the module has been based on the Solidworks Simulation FE software, which has served very well so far. This software, although offering all modelling options required for the module delivery, is a reduced version of professional software and is not often used in the industry. We would like to improve our students' FE modelling knowledge and skills and our Design Engineering programme's profile by making a transition to professional industry-standard software, Ansys. The transition to Ansys however would require upgrading the lecture videos, tutorial sheets and the projects, and to test Ansys for the advanced topics delivered in the module. This transition requires strong student engagement to ensure the extra complexity of the new computational tool will not confuse students and to ensure that students acquire translational finite element knowledge and skills.*

*The student shapers will be selected based on their motivation and engagement during the module. There will be an initial learning phase when students will learn Ansys with the help of the module leader. Then the team will engage in the production of tutorial solutions, lecture problem solutions, mid-term and final project solutions and lecture materials. The students and module leader will collaborate on producing these materials. There is an opportunity to incorporate more practical examples, mainly produced through 3D printing. Another opportunity involves the use of VR, which will be explored time allowing.*

*This project will run during the summer break, over 8 weeks. The team will have weekly meetings to review the progress and share their experience. Students' feedback will be incorporated in the re-design of the module throughout the project.*

*The key outcomes for the StudentShapers will be: a) partnering in the development of teaching materials for improved deep learning, b) expertise in using an industry-standard FEM package, c) exposure to a wide range of real-world problems and opportunities to model those with FEM.*



### How to apply:

An 'expression of interest' - 300-500 words on why a student wishes to engage with the project. Informal interviews or meetings can be used for selection if appropriate.

Applications should be made via the 'expression of interest' form on the StudentShapers website ([here](#)) or accessed using the above QR code. This will then be distributed directly to the appropriate staff partner.

**Deadline:** 4pm 29 April 2022

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