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SCIENCE AND ENGINEERING FOUNDATION YEAR

- BEng (Hons) Electronic Engineering
- BEng (Hons) Mechanical Engineering
- BEng (Hons) Renewable Energy Engineering
- BEng (Hons) Yacht and Powercraft Design
- BEng (Hons) Yacht Design and Production

We would like to take this opportunity to firstly welcome you to the Foundation of the BEng (Hons) Engineering courses at Southampton Solent University. We really hope that this will be an exciting, challenging and valuable chapter in your engineering career. And so, in readiness, we'd like to provide you here with a little more detail regarding our expectations and recommendations, so that you perhaps feel a little more prepared when you first start.

For the Foundation Year there is no specific equipment requirement, however, an existing laptop or personal computer would be advantageous. The University does offer computing facilities, but your own computer would give more flexibility on working at home.

In addition, standard stationary and a scientific calculator will be needed. Your tutors will advise of any other equipment likely to be needed after the term start.

MATHS

Review Of Formulas And Techniques

Integration Table

$\int x^n dx = \frac{x^{n+1}}{n+1} + c, \text{ for } n \neq -1 \text{ (power rule)}$	$\int \frac{1}{x} dx = \ln x + c, \text{ for } x \neq 0$
$\int \sin x dx = -\cos x + c$	$\int \cos x dx = \sin x + c$
$\int \sec^2 x dx = \tan x + c$	$\int \sec x \tan x dx = \sec x + c$
$\int \csc^2 x dx = -\cot x + c$	$\int \csc x \cot x dx = -\csc x + c$
$\int e^x dx = e^x + c$	$\int e^{-x} dx = -e^{-x} + c$
$\int \tan x dx = -\ln \cos x + c$	$\int \frac{1}{\sqrt{1-x^2}} dx = \sin^{-1} x + c$
$\int \frac{1}{1+x^2} dx = \tan^{-1} x + c$	$\int \frac{1}{ x \sqrt{x^2-1}} dx = \sec^{-1} x + c$

During Welcome Week, you will have the chance to see and try out many facilities and activities which are related to your course. As maths is an important tool for engineering, during Welcome Week there will be a maths-based activity. This will help you to know what maths topics you will be covering in the first part of the year and give you some practice at maths problems you will do once term starts. You may find it helpful to review some maths topics before you arrive, in order to make sure no cobwebs build up around your maths.

We understand that students starting on Foundation may have a different range of maths skills, so good preparation would be to revise your Numeracy skills using the resources on www.mathcentre.ac.uk.



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You could work through the following:

Course > Engineering > Arithmetic > Teach Yourself > Rules of Arithmetic.

This is a refresher on BODMAS.

Course > Engineering > Numeracy Skills > Practice and Revision.

This is a refresher on decimals, fractions, approximations, averages, percentages and ratios.

You may also wish to look at sites such as GeoGebra, and in the first year of your course you could download Autograph 5 which is an important tool.

We are really looking forward to welcoming you to Solent Uni in September for the Induction Week and wish you all the best for the summer!

On behalf of the course team,

Tony

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Course Leader - Foundation Engineering

