Introduction to Fluid Mechanics; a core Science and Engineering subject.

Fluid Mechanics is a core subject for Engineers, Applied Mathematicians and some Scientist. It is a subject that will be taught in every Technical University in the world. It is a beautiful subject that can be elegantly described using mathematics and it is a subject that touches the lives of everyone.

In the 15^{th} century **Leonardo de Vinci** made stunning drawings of fluid flow situations and in the 17^{th} century **Isaac Newton** laid the foundations for the mathematical derivation of Newtonian viscous flow. The all embracing **Navier Stokes Equation** was derived in the 19^{th} century and since then scientist and engineers have used the Navier Stokes equation to model both **laminar** and **turbulent flow**.

Numerical solutions of the Navier Stokes equation started emerging in the 1970s and since then powerful computer codes have appeared that can now predict the flow around complex geometries such as aircraft and vehicles, flow of rivers, water channels and even the flow of your own blood streams and complex global weather patterns. The application of fluid mechanics to different areas is enormous and consequently the importance of the subject immense.

There can be a lot of mathematics in fluid mechanics and so the subject may at times appear difficult. This need not necessarily put you off appreciating the value of fluid mechanics as there are elegant experimental flow visualisation techniques and also user friendly software that can now "paint pictures" of many flow situations. These pictures can provide useful insight into the flow behaviour of many different situations without you necessarily becoming bogged down in high level mathematics that certainly lies behind the software solvers.

Fluid Mechanics is a powerful and ageless subject that will be with us for as long as the current universe exists!

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