

## Applications Of Numerical Methods In Mechanical Engineering

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Computational problems: attack strategy Develop mathematical model (usually requires a combination of math skills and some a priori knowledge of the system) Come up with numerical algorithm (numerical analysis skills) Implement the algorithm (software skills) Run, debug, test the software Visualize the results Interpret and validate the results Mathematical modeling

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Numerical analysis is the study of algorithms that use numerical approximation (as opposed to symbolic manipulations) for the problems of mathematical analysis (as distinguished from discrete mathematics). Numerical analysis naturally finds application in all fields of engineering and the physical sciences, but in the 21st century also the life sciences, social sciences, medicine, business and even the arts have adopted elements of scientific computations. The growth in computing power has revol

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Numerical methods have been the most used approaches for modeling multiphase flow in porous media, because the numerical methodology is able to handle the nonlinear nature of the governing equations for multiphase flow as well as complicated flow condition in reservoirs, which cannot be handled by other approaches in general.

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