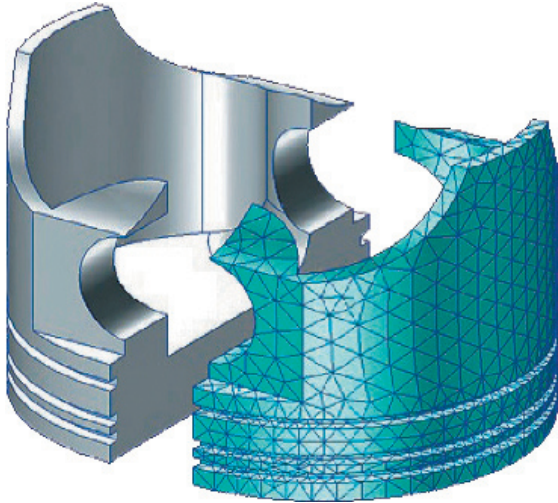


# MSC.Patran for Advanced Users



## Course Description

PAT302 provides an in-depth examination of the advanced features of MSC.Patran. Sample topics covered by PAT302 include: advanced MSC.Patran features usage for meshing and mesh refinement, use of various MSC.Patran Command Language (PCL) files for session customization, application of advanced geometric construction techniques, definition of fields to represent spatially varying functions for loads and boundary conditions, generation of constraint equations (MPCs) to define physical relationships, and creation of sophisticated multi-effect graphical images.

## Prerequisites:

- Basic knowledge of MSC.Patran
- Completion of the NAS120 course is recommended

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## Topics:

- Learn user interface shortcuts and advanced capabilities that will increase your MSC.Patran efficiency and help you customize your work environment
- Wildcards, keywords, list processor syntax, and command line options
- Database/model manipulation using group transformation and database merge capabilities
- Customizing the quickpick menu and start-up environment
- Discover advanced geometry modelling and CAD access features
- Advanced construction and editing techniques help you repair non-topologically congruent (i.e., “dirty”) geometry
- Learn the mathematical basis for the various geometry formats
- Parametric cubic geometry and the MSC.Patran 2.5 convention
- Apply advanced finite element modelling capabilities
- Mapped, automated and 2-1/2-D meshing, mesh smoothing
- Global-local and thermal-structural modelling using FEM fields
- Advanced node and element editing techniques
- Multi-point constraints
- Post-processing and advanced graphical results display
- Combine multiple animation images
- Advanced capabilities of results, insight, XY plot, and text report
- Learn exactly how the numerical results values are used to produce the graphical display, i.e., data averaging and extrapolation
- MSC.Patran Command Language (PCL) Basics
- PCL programming in conjunction with MSC.Patran modelling
- PCL syntax, directives, operators, variables, arrays and libraries
- Write a PCL routine to automate parameterized geometry creation

