



Course Code	EDU-CAT-E-GPF-F
Brand & Release	CATIA V5R17
Duration	1 day
Language	English
Level	Fundamentals
Method	Companion and ILT

## Training Material References

Instructor Foils: EDU-CAT-E-GPF-FI-V5R17  
Foils: EDU-CAT-E-GPF-FF-V5R17  
Exercises: EDU-CAT-E-GPF-FX-V5R17  
Detailed Steps: EDU-CAT-E-GPF-FS-V5R17

## Objectives

- Use Finite Element Analysis
- Mesh a part with different element types and shapes, and define part properties
- Apply clamp, slider, and iso-static restraints; and force, moment and displacement loads
- Compute a static analysis for a single part
- Visualize images of the analysis results, and produce analysis reports
- Refine existing meshes in order to produce more accurate results

## Participants' Profile

Mechanical Designers

## Prerequisites

CATIA V5 Fundamentals



Course Code	EDU-CAT-E-GPE-F
Brand & Release	CATIA V5R17
Duration	1 day
Language	English
Level	Fundamentals
Method	Companion and ILT

## Training Material References

Instructor Foils: EDU-CAT-E-GPE-FI-V5R17  
 Foils: EDU-CAT-E-GPE-FF-V5R17  
 Exercises: EDU-CAT-E-GPE-FX-V5R17  
 Detailed Steps: EDU-CAT-E-GPE-FS-V5R17

## Objectives

- Define and customize material properties
- Apply pressure, acceleration and force density loads; and define virtual parts
- Apply pivot, ball-joint, and user-defined restraints
- Compute a frequency analysis for a single part
- Create planar sections with which to visualize internal result values
- Compute and refine a mesh using adaptive meshing in order to achieve a pre-defined accuracy

## Participants' Profile

Mechanical Designers

## Prerequisites

Generative Part Structural Analysis Fundamentals

## Content

This course will focus on advanced Finite Element Analysis pre-processing techniques and post-processing tools, including the concept of virtual parts to avoid excessive geometric modeling. It will teach you how to perform a frequency analysis on a single part, and the use of adaptive meshing to achieve pre-defined accuracy.

### GPS Advanced Pre-Processing Tools

- Advanced Pre-Processing Tools
- Frequency Analysis

### Computation

- Computing a Frequency Case
- Computing with Adaptivity
- Historic of Computation

### GPS Advanced post-Processing Tools

- Results Visualization
- Results Management
- Refinement

## Exercises

Ex. 1: Pre-Processing' Recap Exercise (20min) / All sectors  
 Ex. 2: Results Visualization' Recap Exercise (10min) / All sectors  
 Ex. 3: Master Exercise: Frequency Analysis on a Crank Shaft (30min) / All sectors