

# SAP2000

## Explore SAP2000 Tutorials

### List of SAP2000 Tutorials

Title	Description
<a href="#">Create circular openings</a>	Circular openings may be created within area objects, and the surrounding mesh may be improved.
<a href="#">2D-view cutting planes</a>	Setting the tolerance for cutting planes within 2D views such that all desired objects are displayed.
<a href="#">Create bulb-girder sections with rounded corners</a>	Use the Section Designer to create a bulb-girder section with rounded corners.
<a href="#">Radial point load</a>	Application of point loads in the radial direction using the Advanced Joint Coordinate Axes feature.
<a href="#">Manual modification of bridge bearings</a>	Guidelines for the manual modification of bridge bearings automatically created by the bridge modeler.
<a href="#">Composite section</a>	Several approaches to the modeling of composite sections.
<a href="#">Dynamic loading imposed on structure by lowering a mass via a pulley assembly</a>	Modeling of pulley assembly with the primary goal of applying the pulley assembly loads to the structure.
<a href="#">Section-cut first steps</a>	Introductory tutorial for using section cuts.
<a href="#">Variable girder spacing</a>	Procedure for developing a model with variable girder spacing.
<a href="#">Moment-curvature analysis for hollow prestressed-concrete piles</a>	Perform moment-curvature analysis on custom sections developed within the Section Designer.
<a href="#">Steel-girder bridge with variable flange thickness</a>	Guidelines and tutorial for creating a steel-girder bridge with variable flange thickness.
<a href="#">Modeling a pin connection between crossing members</a>	Modify joints and apply constraints such that a pin connection allows crossing members to translate freely.
<a href="#">Modeling simply supported shells</a>	Procedure for modeling simply supported shells and coordinating their support systems.
<a href="#">Time dependent properties first steps (SAP2000)</a>	Basic introduction to using time dependent material properties
<a href="#">Pushover analysis first steps</a>	Guidelines for performing pushover analysis.
<a href="#">Design first steps</a>	An overview of the design-check procedure for steel-frame structural systems.
<a href="#">Reinforced-concrete column and beam design</a>	Design reinforced-concrete columns and beams while considering combined performance measures and interaction-surface output.
<a href="#">Time-history analysis first steps</a>	Overview of the procedure for time-history analysis.
<a href="#">Acceleration load in arbitrary direction</a>	Guidelines for acceleration-load application in an arbitrary direction. Applicable to static, modal, and buckling load cases.
<a href="#">Steel-frame pipe rack</a>	A detailed and extensive procedure which describes the modeling, analysis, and design of a 3D steel-frame pipe rack system.
<a href="#">Haunched steel-girder bridge</a>	Guidelines and tutorial for modeling haunched steel-girder bridges.
<a href="#">Joint-pattern first steps</a>	This tutorial provides an introduction to the assignment of joint patterns.
<a href="#">Create custom sections using polygonal shapes</a>	Create custom cross sections by drawing polygonal shapes within the section designer, then modify or add to their geometry through reshape mode or interactive database editing.
<a href="#">Layout-line geometry</a>	Guidelines for defining vertical and horizontal layout lines, also known as baselines.
<a href="#">Complicated joint patterns</a>	Guidelines for creating complicated joint patterns using interactive database editing.
<a href="#">Obtain results for individual stages of a staged-construction load case</a>	Options and an example of how to obtain results for individual stages of a staged-construction load case.
<a href="#">Tuned-mass damper</a>	An overview of the tuned-mass damper and guidelines for modeling the device.
<a href="#">Concrete confinement for Caltrans sections</a>	Changing the confinement characteristics for reinforced-concrete Caltrans sections within the Section Designer.

<a href="#">Concrete bent with nonprismatic cap beam</a>	Create and modify a concrete bent which features a nonprismatic cap beam. Materials, sections, grids, and supports are defined.
<a href="#">Influence-based moving-load analysis first steps (SAP2000)</a>	Procedure for initiating influence-based moving-load analysis.
<a href="#">Step-by-step moving-load analysis first steps (SAP2000)</a>	Procedure for initiating step-by-step moving-load analysis.
<a href="#">Cable-stayed bridge</a>	Tutorial included in the SAP2000 bridge-examples document.
<a href="#">Concrete box-girder bridge model</a>	Model from the SAP2000 Bridge Examples document.
<a href="#">Steel bridge</a>	Tutorial included with the SAP2000 Bridge Examples document.
<a href="#">Manual modeling of wall-type bents</a>	This tutorial describes a manual modeling process for wall-type bents within bridge objects.
<a href="#">Hinge first steps (SAP2000)</a>	Basic introduction to hinge application in SAP2000.
<a href="#">Water pressure</a>	This tutorial provides guidelines for the application of loading induced by water pressure on an area object.
<a href="#">Vibrating-machinery steel skid on piles</a>	This tutorial demonstrates the modeling of vibrating machinery and its connection to a steel-skid structural system.
<a href="#">Lane definition per layout line or frame</a>	This tutorial provides guidelines for lane definition according to either layout-line or frame-object configuration.
<a href="#">Joint renumbering</a>	The process for renumbering structural joints is outlined in this tutorial.
<a href="#">Create and copy load combinations</a>	This tutorial explains how interactive database editing allows users to create and copy load combinations from one model to another.
<a href="#">Cold-formed steel truss</a>	This tutorial demonstrates the modeling of a cold-formed steel truss system.
<a href="#">Locate center of mass</a>	Procedure for locating the center of mass for a structural system.
<a href="#">Center-of-gravity determination</a>	The process for determining center of gravity is given in this tutorial.