

SAP2000

Explore SAP2000 Tutorials

List of SAP2000 Tutorials

Title	Description
Design first steps	An overview of the design-check procedure for steel-frame structural systems.
Reinforced-concrete column and beam design	Design reinforced-concrete columns and beams while considering combined performance measures and interaction-surface output.
Time-history analysis first steps	Overview of the procedure for time-history analysis.
Pushover analysis first steps	Guidelines for performing pushover analysis.
Acceleration load in arbitrary direction	Guidelines for acceleration-load application in an arbitrary direction. Applicable to static, modal, and buckling load cases.
Section-cut first steps	Introductory tutorial for using section cuts.
Composite section	Several approaches to the modeling of composite sections.
Steel-frame pipe rack	A detailed and extensive procedure which describes the modeling, analysis, and design of a 3D steel-frame pipe rack system.
Haunched steel-girder bridge	Guidelines and tutorial for modeling haunched steel-girder bridges.
Joint-pattern first steps	This tutorial provides an introduction to the assignment of joint patterns.
Create bulb-girder sections with rounded corners	Use the Section Designer to create a bulb-girder section with rounded corners.
Create custom sections using polygonal shapes	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.
Layout-line geometry	Guidelines for defining vertical and horizontal layout lines, also known as baselines.
Complicated joint patterns	Guidelines for creating complicated joint patterns using interactive database editing.
Obtain results for individual stages of a staged-construction load case	Options and an example of how to obtain results for individual stages of a staged-construction load case.
Tuned-mass damper	An overview of the tuned-mass damper and guidelines for modeling the device.
Concrete confinement for Caltrans sections	Changing the confinement characteristics for reinforced-concrete Caltrans sections within the Section Designer.
Modeling a pin connection between crossing members	Modify joints and apply constraints such that a pin connection allows crossing members to translate freely.
Manual modification of bridge bearings	Guidelines for the manual modification of bridge bearings automatically created by the bridge modeler.
Concrete bent with nonprismatic cap beam	Create and modify a concrete bent which features a nonprismatic cap beam. Materials, sections, grids, and supports are defined.
Influence-based moving-load analysis first steps (SAP2000)	Procedure for initiating influence-based moving-load analysis.
Step-by-step moving-load analysis first steps (SAP2000)	Procedure for initiating step-by-step moving-load analysis.
Cable-stayed bridge	Tutorial included in the SAP2000 bridge-examples document.
Concrete box-girder bridge model	Model from the SAP2000 Bridge Examples document.
Steel bridge	Tutorial included with the SAP2000 Bridge Examples document.
Variable girder spacing	Procedure for developing a model with variable girder spacing.
Steel-girder bridge with variable flange thickness	Guidelines and tutorial for creating a steel-girder bridge with variable flange thickness.
2D-view cutting planes	Setting the tolerance for cutting planes within 2D views such that all desired objects are displayed.

Manual modeling of wall-type bents	This tutorial describes a manual modeling process for wall-type bents within bride objects.
Modeling simply supported shells	Procedure for modeling simply supported shells and coordinating their support systems.
Create circular openings	Circular openings may be created within area objects, and the surrounding mesh may be improved.
Time dependent properties first steps (SAP2000)	Basic introduction to using time dependent material properties
Hinge first steps (SAP2000)	Basic introduction to hinge application in SAP2000.
Water pressure	This tutorial provides guidelines for the application of loading induced by water pressure on an area object.
Vibrating-machinery steel skid on piles	This tutorial demonstrates the modeling of vibrating machinery and its connection to a steel-skid structural system.
Radial point load	Application of point loads in the radial direction using the Advanced Joint Coordinate Axes feature.
Moment-curvature analysis for hollow prestressed-concrete piles	Perform moment-curvature analysis on custom sections developed within the Section Designer.
Lane definition per layout line or frame	This tutorial provides guidelines for lane definition according to either layout-line or frame-object configuration.
Joint renumbering	The process for renumbering structural joints is outlined in this tutorial.
Create and copy load combinations	This tutorial explains how interactive database editing allows users to create and copy load combinations from one model to another.
Cold-formed steel truss	This tutorial demonstrates the modeling of a cold-formed steel truss system.
Locate center of mass	Procedure for locating the center of mass for a structural system.
Center-of-gravity determination	The process for determining center of gravity is given in this tutorial.
Dynamic loading imposed on structure by lowering a mass via a pulley assembly	Modeling of pulley assembly with the primary goal of applying the pulley assembly loads to the structure.