

# Home

This is the home page for the Tutorials space that contains tutorials for all CSI programs, usually with the relevant model attached. Tutorials typically provide step-by-step instructions of how to create specific model or accomplish certain task.

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## Browse tutorials by program

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### Tips

- You may click on the table heading in the table below to sort by a particular column (default sorting is by title).
- Model ID uniquely identifies each model. "na" indicates that no model accompanies the tutorial.

Model ID	Title	Description	Program	Version
na	<a href="#">2D-view cutting planes</a>	Setting the tolerance for cutting planes within 2D views such that all desired objects are displayed.	SAP2000	14.2.0
na	<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.	SAP2000	14.2.3
80	<a href="#">Analysis and design of composite steel-girder bridge</a>	Use CSiBridge to model a composite steel-girder bridge based on that from the LRFD Design Example, Steel Girder Superstructure Bridge (FHWA NHI-04-041).	CSiBridge	16.0.0
581.1	<a href="#">Applying parametric variation to bridge width and girder spacing for bridge object with skewed abutments (steel I-girder bridge deck section)</a>	Demonstration of how to apply parametric variation to the deck width and girder spacing of bridge object with skewed abutments.	CSiBridge	18.0.1
581	<a href="#">Applying parametric variation to bridge width for bridge object with skewed abutments (flat slab bridge deck section)</a>	Demonstration of how to apply parametric variation to bridge object with skewed abutments	CSiBridge	17.2.0
na	<a href="#">Applying point, line, and area loads to bridge objects</a>	This tutorial demonstrates point-, line-, and area-load application to bridge objects.	CSiBridge	15.0.0

na	Building models manually via the commands on the Advanced Tab	Tutorial that provides some tips for building bridge models manually via the commands on the Advanced tab.	CSiBridge	15+
na	Cable-stayed bridge	Tutorial included in the SAP2000 bridge-examples document.	SAP2000	11
na	Cable-stayed bridge first steps	Basic guidelines for modeling of cable-stayed bridges.	CSiBridge	all
na	Center-of-gravity determination	The process for determining center of gravity is given in this tutorial.	SAP2000	12+
na	Cold-formed steel truss	This tutorial demonstrates the modeling of a cold-formed steel truss system.	SAP2000	
na	Complicated joint patterns	Guidelines for creating complicated joint patterns using interactive database editing.	SAP2000	14.1.0
na	Composite section	Several approaches to the modeling of composite sections.	SAP2000	12.0.0
na	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.	SAP2000	12.0.1
na	Concrete box-girder bridge model	Model from the SAP2000 Bridge Examples document.	SAP2000	11.0.8
na	Concrete confinement for Caltrans sections	Changing the confinement characteristics for reinforced-concrete Caltrans sections within the Section Designer.	SAP2000	14.2.4
na	Create and copy frame properties	Use interactive database editing to create and copy frame section properties between models.	CSiBridge	15.0.0+
na	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.	SAP2000	14.2.3

na	Create bulb-girder sections with rounded corners	Use the Section Designer to create a bulb-girder section with rounded corners.	SAP2000	14.2.0
na	Create circular openings	Circular openings may be created within area objects, and the surrounding mesh may be improved.	SAP2000	all
na	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.	SAP2000	14.2.0
na	Defining lanes from frames in CSiBridge	Describes procedure for defining lanes from frames in CSiBridge.	CSiBridge	17.3.0
na	Design first steps	An overview of the design-check procedure for steel-frame structural systems.	SAP2000	all
580	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.	SAP2000	17.2.0
na	Haunched steel-girder bridge	Guidelines and tutorial for modeling haunched steel-girder bridges.	SAP2000	12.0.2
na	Hinge first steps (CSiBridge)	Basic introduction to hinge application in CSiBridge.	CSiBridge	
na	Hinge first steps (SAP2000)	Basic introduction to hinge application in SAP2000.	SAP2000	
na	Import frame properties from shape libraries	Guidelines for importing frame properties from shape libraries.	CSiBridge	15.1.1+
na	Influence-based moving-load analysis first steps (CSiBridge)	Procedure for setting up influence-based moving-load analysis.	CSiBridge	18.0.1
na	Influence-based moving-load analysis first steps (SAP2000)	Procedure for initiating influence-based moving-load analysis.	SAP2000	12.1.0

na	Joint renumbering	The process for renumbering structural joints is outlined in this tutorial.	SAP2000	
na	Joint-pattern first steps	This tutorial provides an introduction to the assignment of joint patterns.	SAP2000	12.1.0
na	Lane definition per layout line or frame	This tutorial provides guidelines for lane definition according to either layout-line or frame-object configuration.	SAP2000	14.2.0
na	Layout-line geometry	Guidelines for defining vertical and horizontal layout lines, also known as baselines.	SAP2000	14.2.0
na	Locate center of mass	Procedure for locating the center of mass for a structural system.	SAP2000	12+
na	Manual modeling of bridge foundations	PowerPoint presentations are attached which provide detailed examples of a 2-span PCC-girder bridge with three different foundation types. A step-by-step modeling procedure, with detailed descriptions and sketches, outlines the process.	CSiBridge	15.1.1+
na	Manual modeling of wall-type bents	This tutorial describes a manual modeling process for wall-type bents within bridge objects.	SAP2000	14.2.2
na	Manual modification of bridge bearings	Guidelines for the manual modification of bridge bearings automatically created by the bridge modeler.	SAP2000	12.0.2
na	Merging two models	Tutorial describing how to merge two models.	CSiBridge	17+
82	Model from Bridge Seismic Design Request manual	Example bridge model from the Bridge Seismic Design Request manual.	CSiBridge	16.0.0
na	Modeling a pin connection between crossing members	Modify joints and apply constraints such that a pin connection allows crossing members to translate freely.	SAP2000	14.2.3

na	Modeling simply supported shells	Procedure for modeling simply supported shells and coordinating their support systems.	SAP2000	na
na	Moment-curvature analysis for hollow prestressed-concrete piles	Perform moment-curvature analysis on custom sections developed within the Section Designer.	SAP2000	12.0.1
na	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.	SAP2000	14.2.4
na	Pushover analysis first steps	Guidelines for performing pushover analysis.	SAP2000	12.0.1
na	Radial point load	Application of point loads in the radial direction using the Advanced Joint Coordinate Axes feature.	SAP2000	14.2.4+
na	Reinforced-concrete column and beam design	Design reinforced-concrete columns and beams while considering combined performance measures and interaction-surface output.	SAP2000	
na	Section-cut first steps	Introductory tutorial for using section cuts.	SAP2000	all
na	Steel bridge	Tutorial included with the SAP2000 Bridge Examples document.	SAP2000	11
na	Steel-frame pipe rack	A detailed and extensive procedure which describes the modeling, analysis, and design of a 3D steel-frame pipe rack system.	SAP2000	
na	Steel-girder bridge with variable flange thickness	Guidelines and tutorial for creating a steel-girder bridge with variable flange thickness.	SAP2000	14.0.0
na	Step-by-step moving-load analysis first steps (CSIBridge)	Procedure for setting up step-by-step moving-load analysis.	CSIBridge	18.0.1
na	Step-by-step moving-load analysis first steps (SAP2000)	Procedure for initiating step-by-step moving-load analysis.	SAP2000	all

na	Tall shear wall building	Walk-Thru Example for Shear Wall Building Assessment in Perform-3D	Perform-3D	na
na	Time dependent properties first steps (SAP2000)	Basic introduction to using time dependent material properties	SAP2000	14+
na	Time-history analysis first steps	Overview of the procedure for time-history analysis.	SAP2000	
na	Tuned-mass damper	An overview of the tuned-mass damper and guidelines for modeling the device.	SAP2000	
1784	Using load optimizer to optimize tension in cables of a cable-stayed bridge	This page provides the cable-stayed bridge model that is described in the CSiLoadOptimizer Technical Note.	CSiBridge	19.2.2
na	Using the graphical user interface	Tips and tricks for efficiently using the graphical user interface to develop models in SAP2000 and ETABS.	ETABS, SAP2000	
na	Variable girder spacing	Procedure for developing a model with variable girder spacing.	SAP2000	14.1.0
na	Vibrating-machinery steel skid on piles	This tutorial demonstrates the modeling of vibrating machinery and its connection to a steel-skid structural system.	SAP2000	
na	Water pressure	This tutorial provides guidelines for the application of loading induced by water pressure on an area object.	SAP2000	