Cantilever beam of the length L=3m, fixed on the left edge, loaded on the top.

Material data: top & bottom layers - material 1

middle layer - material 2



STUDENT EDITION OF ABAQUS IS RESTRICTED TO 1000 NODES !!!

	[Menu/Part/Create] or	💠 Create Part X
	click the button	Name: composite_beam Modeling Space
	Create Part	③ 3D 〇 2D Planar 〇 Axisymmetric
MODULE: PART	Create Part —	Type Options Deformable None available Discrete rigid None available Analytical rigid Eulerian Base Feature Shape Shape Type Solid Shell Wire Point Point Extrusion Approximate size: 2 Continue Cancel

Create rectangle Create rectangle Starting corner coordinates: 0,0 Opposite corner: 0.4,0.6 Depth: 3	Edit Base Extrusion End Condition Type: Blind Depth: 3 Options Options Note: Twist and draft cannot be specified together. Include twist, pitch: 0 (Dist/Rev) Include draft, angle: 0 (Degrees) OK Cancel
Create Datum Plane: Offset From Principal Plane	
Create Datum Plane: Offset From Plane	
Partition Cell: Use Datum Plane	
To hide planes: choose Remove selected Select entries to remove: Datums, then click each plane	

In toolbar: Selection change into Cells and [Menu/Tools/Set/Manager/Cre te] Create 3 layers, starting from the top	a Selection Cells Cells Create Set Name: layer_top Type: Geometry Continue Cancel
	🜩 Set Manager
	Name Type
	layer_bottom Geometry layer_middle Geometry
	layer_top Geometry
	Create Edit Rename Delete Dismiss
Create Datum CSYS: 3 points	ds



	Edit Section × Name: Section-1 Type: Solid, Homogeneous Material: Material-1 Vaterial: Material-1 OK Cancel
Assign Section	 Region Selection Eligible Sets Sets below may contain elements, cells, shell faces, or wire edges. Name filter: Vame Izyer_bottom Geometry layer_middle Geometry layer_top Geometry layer_top Geometry layer_top Geometry Geometry layer_top Geometry Section: Sect



MODULE: ASSEMBLY	Create Instance	 Create Instance Parts Models Parts composite_beam Instance Type Dependent (mesh on part) Independent (mesh on instance) Note: To change a Dependent instance's mesh, you must edit its part's mesh. Auto-offset from other instances OK Apply Cancel
MODULE: STEP	Create Step	Create Step × Name: Step=1 Insert new step after Initial Procedure type: General Dynamic, Temp-disp, Explicit Geostatic Heat transfer Mass diffusion Soils Static, General Static, Riks Continue Cancel



	😓 Edit Boundary Condition 🛛 🗙
	Name BC 1
	Name: BC-1
	Type: Displacement/Rotation
	Step: Initial
	CSYS: (Global) 😓 🙏
	☑ U1
	□ UR2
	UR3
	Mater The Forlage entropy of the
	maintained in subsequent steps.
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Create Load	Create Load X
Create Load	Create Load X Name: Load-1
Create Load	Create Load × Name: Load-1 Step: Step-1
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Create Load Select top edge of the model	Create Load Name: Load-1 Step: Step-1 Procedure: Static, General Category Mechanical Chemical Fluid Fluid Shell edge load Surface traction
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Create Load Select top edge of the model	Create Load X Name Load-1 Step: Step: Procedure: Static, General Category Types for Selected Step Procedure: Static, General Concentrated force Moment Pluid Surface traction Pipe pressure Body force Line load Gravity Body force Line load Gravity Body force Line load Gravity Both load V Ymme: Load-1 Type: Pressure Step: Step-1 (Static, General) Region: Surf-1
Create Load Select top edge of the model	Image: Create Load Image: Create Load Name: Load-1 Image: Create Cost Step: Step: 1 Image: Create Cost Procedure: Static, General Image: Concentrated force Image: Create Cost Shell edge load Surface traction Surface traction Image: Fluid Surface traction Image: Continue Cancel Image: Contimage: Contimage: Continue Cancel
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Create Load Load Select top edge of the model	Create Load Name View Step: Step: View Category Types for Selected Step Octorie Stell dog load Gavity Betectical/Magnetic Other Distribution: Cancret Continue Cancret

ESH	Seed Part Instance	 ➡ Global Seeds ➤ Sizing Controls Approximate global size: 0.12 ☑ Curvature control Maximum deviation factor (0.0 < h/L < 1.0): 0.1 (Approximate number of elements per circle: 8) Minimum size control ● By fraction of global size (0.0 < min < 1.0) 0.1 ○ By absolute value (0.0 < min < global size) 0.012 ○ K Apply Defaults Cancel
MODULE	Assign Mesh Controls	Mesh Controls Element Shape Hex Hex Hex-dominated Technique As is Free Structured Sweep Bottom-up Multiple Assign Stack Direction OK



If the calculations completed successfully press Results.



