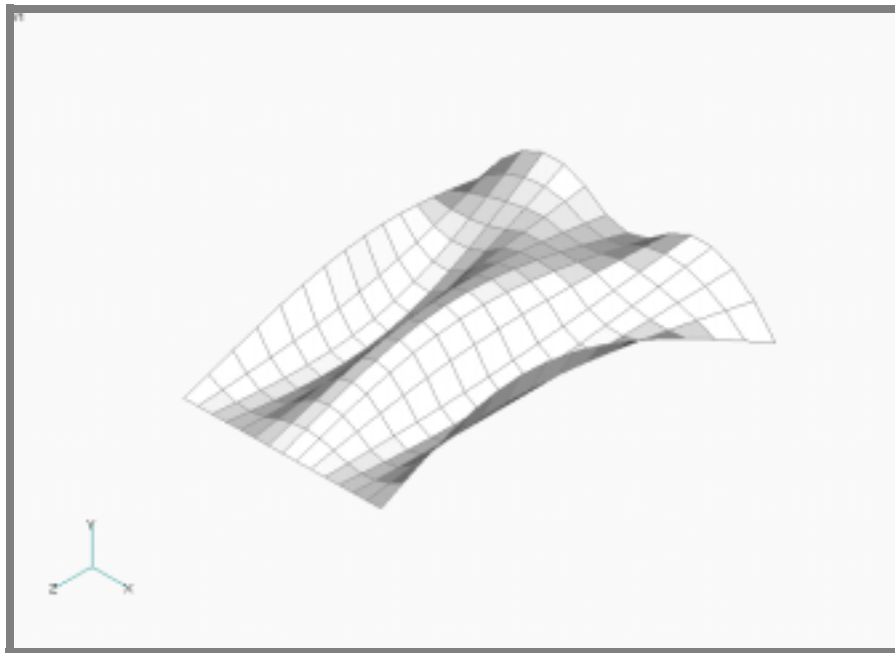

WORKSHOP 3

Surface Modeling w/ Spline Curves



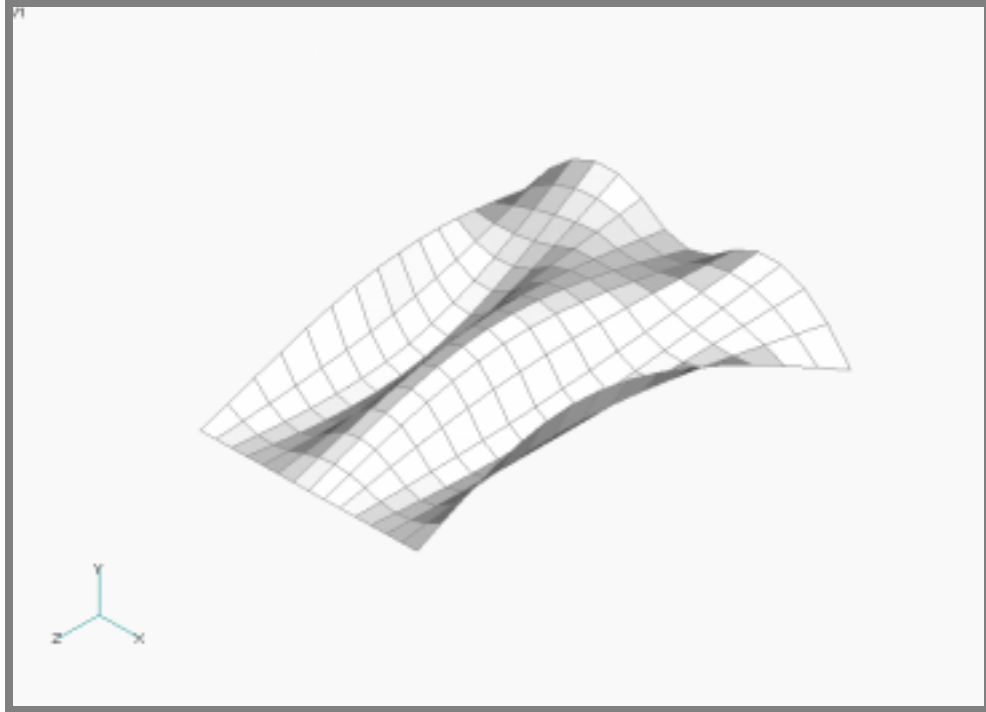
Objectives

- Create spline curves through points.
- Create surface through spline curves.
- Perform N4W operations through the Command Toolbar.
- Utilize workplanes.



Model Description:

MSC.Nastran for Windows has the ability to fit a spline curve through pre-existing points. One can also create a surface through the spline curves and obtain a finite element model. This exercise allows you to practice working with workplanes and performing operations with the Command Toolbar.

Figure 3.1

Suggested Exercise Steps:

- Create points to fit the first spline curve.
- Offset the workplane by a distance of 4.
- Create points for second spline curve.
- Offset workplane by 3 units.
- Create third spline (straight line).
- Fit a surface through the spline curves.

Exercise Procedure:

1. Start up MSC.Nastran for Windows V4.0 and create a new model.

Double click on the icon labeled **MSC.Nastran for Windows V4.0**.

Open Model File:

New Model

2. Create spline curves using the icon toolbar.

Click on:

Curves



Click on:

Spline



Click on:

Thru Points



(The above sequence is the same as **Geometry/Curve-Spline/Project Points...**)

Methods^

Locate in Workplane

X:	Y:
0	0
2	1
3	0.5
4	1
6	0

OK

OK

OK

OK

OK

Cancel

Cancel

Shift the workplane to create the next spline curve in 3D space.

Click on:

Workplane



Move Plane:

Offset Distance...

Z Offset:

4

OK

View/Rotate... <F8>

Isometric

OK

Click on:

Thru Points



X:

Y:

1	1
2	0
3	1
4	0
5	1

OK

OK

OK

OK

OK

Cancel

Cancel

Shift the workplane to create the next spline curve in 3D space.

Click on:

Workplane



Move Plane:

Offset Distance...

Z Offset:

3

OK

View/Autoscale <Ctrl+A>

Click on:

Thru Points



X:

Y:

1	0
2	0
3	0
4	0
5	0

OK

OK

OK

OK

OK

Cancel

Cancel

Click on:

Main Toolbar



3. Create a surface that runs through all the spline curves.

Click on:

Surfaces



Click on:

Loft



Select All

OK

Cancel

4. Get a better view of the model.

Click on: **Workplane**



Uncheck **Draw Workplane**.

Draw Workplane

Done

View/Autoscale <Ctrl+A>

View/Select... <F5>

Render

OK

Click the **View Style** toolbar button.



Solid

Click the **Dynamic Rotate** toolbar button.



View the model by rotating while holding down the **Left Mouse Button**.

To close **Dynamic Rotate**:

OK

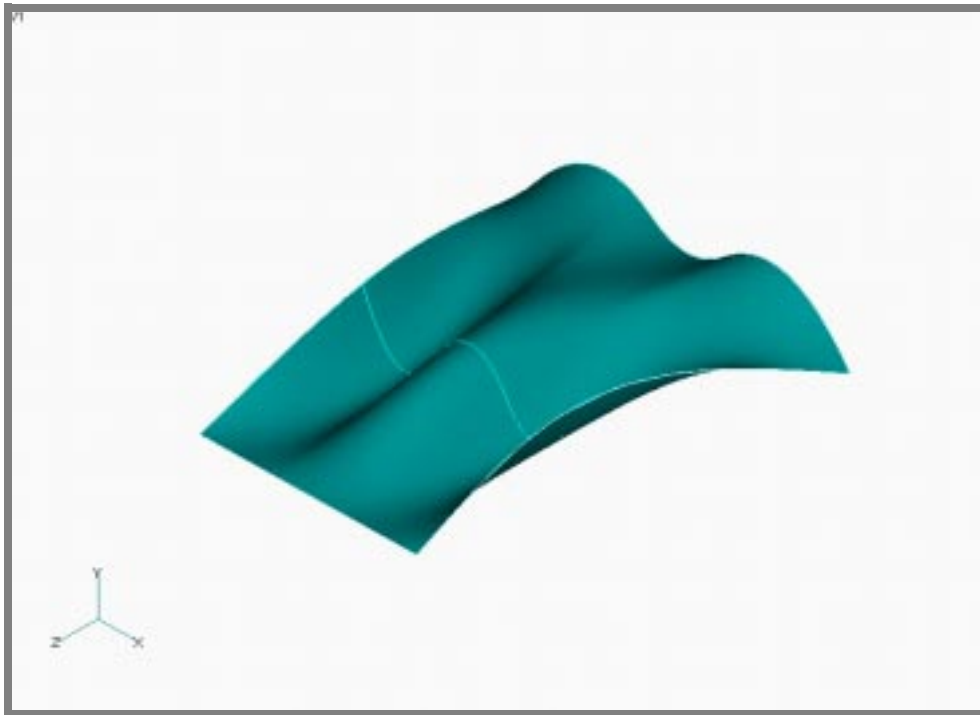
To keep rotated position

or

Cancel

To revert to original, unrotated position

Figure 3.2



When done viewing:

OK

This concludes the exercise.

File/Save

File/Exit

