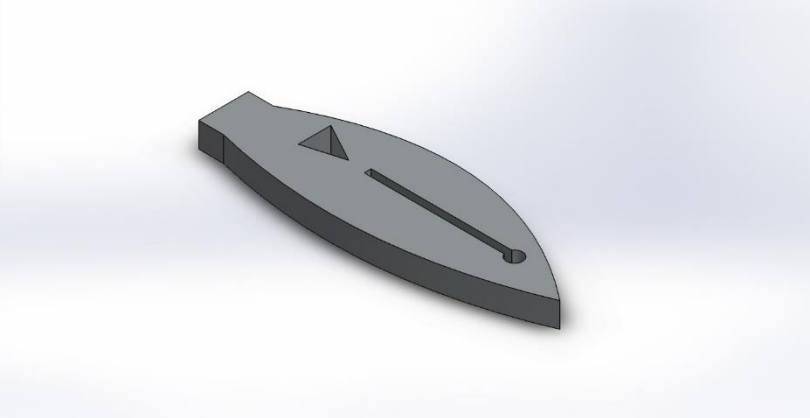
City College Of Technology



Simulation of newblade

Date: Friday, June 08, 2018
Designer: Damar Saul
Study name: SimulationXpress Study
Analysis type: Static

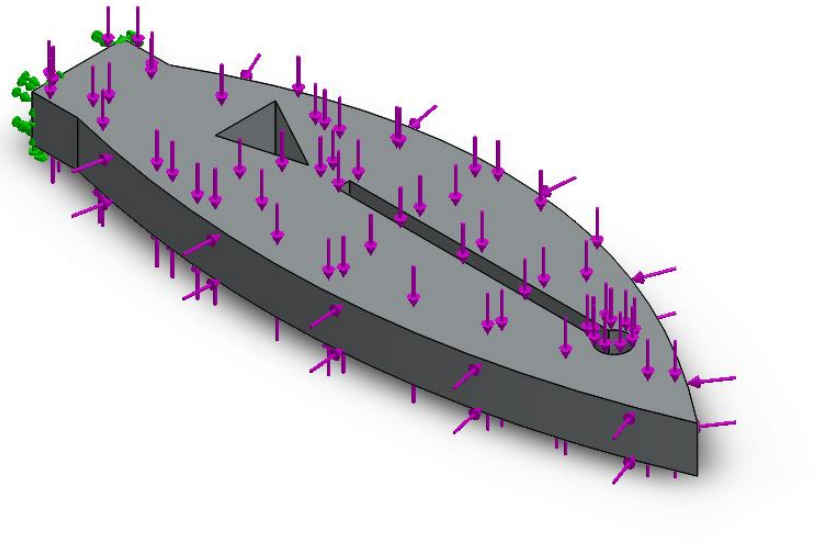
Table of Contents

Description

Ex-06 Advanced Solid Modeling 2

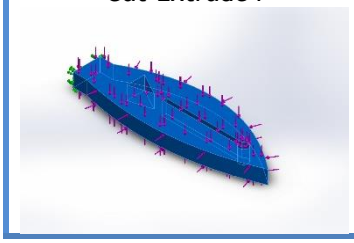
Assumptions

Model Information

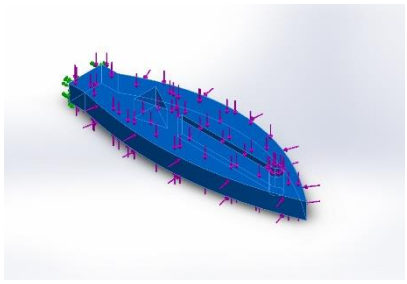


Model name: newblade
Current Configuration: Default

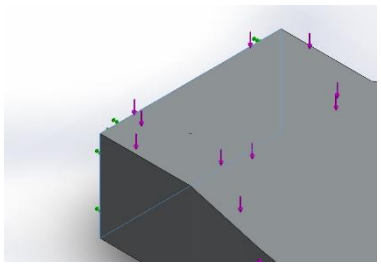
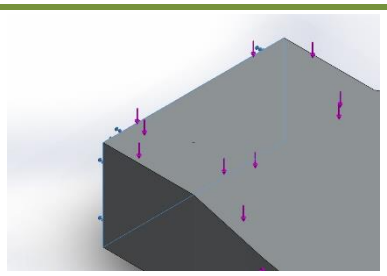
Solid Bodies			
Document Name and Reference	**Treated As**	**Volumetric Properties**	**Document Path/Date Modified**

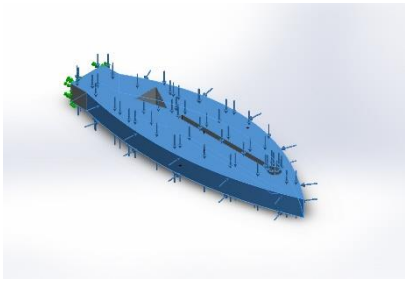
Cut-Extrude4 	Solid Body	**Mass:0.607543 kg** **Volume:7.78867e-005 m^3** **Density:7800.35 kg/m^3** **Weight:5.95392 N**	**F:\solid works\newblade.SLDPRT** Jun 07 19:07:16 2018

Material Properties

Model Reference	Properties		Components
	**Name:** **Model type:** **Default failure criterion:** **Yield strength:** **Tensile strength:**	Chrome Stainless Steel Linear Elastic Isotropic Max von Mises Stress 1.72339e+008 N/m^2 4.13613e+008 N/m^2	SolidBody 1(Cut-Extrude4)(newblade)

Loads and Fixtures

Fixture name	Fixture Image	Fixture Details
Fixed-1		**Entities:** 1 face(s) **Type:** Fixed Geometry
Fixed-2		**Entities:** 1 face(s) **Type:** Fixed Geometry

Load name	Load Image	Load Details
Force-1		**Entities:** 4 face(s) **Type:** Apply normal force **Value:** 1 N

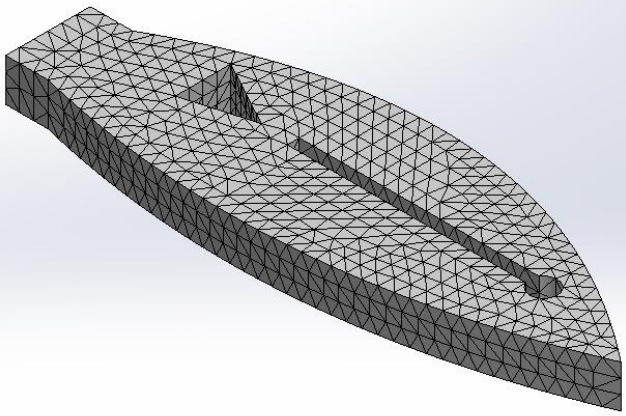
Mesh information

Mesh type	Solid Mesh
Mesher Used:	Standard mesh
Automatic Transition:	Off
Include Mesh Auto Loops:	Off
Jacobian points	4 Points
Element Size	0.168189 in
Tolerance	0.00840945 in
Mesh Quality Plot	High

Mesh information - Details

Total Nodes	11486
Total Elements	6872
Maximum Aspect Ratio	4.5334
% of elements with Aspect Ratio < 3	99.7
% of elements with Aspect Ratio > 10	0
% of distorted elements(Jacobian)	0
Time to complete mesh(hh;mm;ss):	00:00:02
Computer name:	V511A-15

Model name: newblade
Study name: SimulationXpress Study(-Default-)
Mesh type: Solid Mesh



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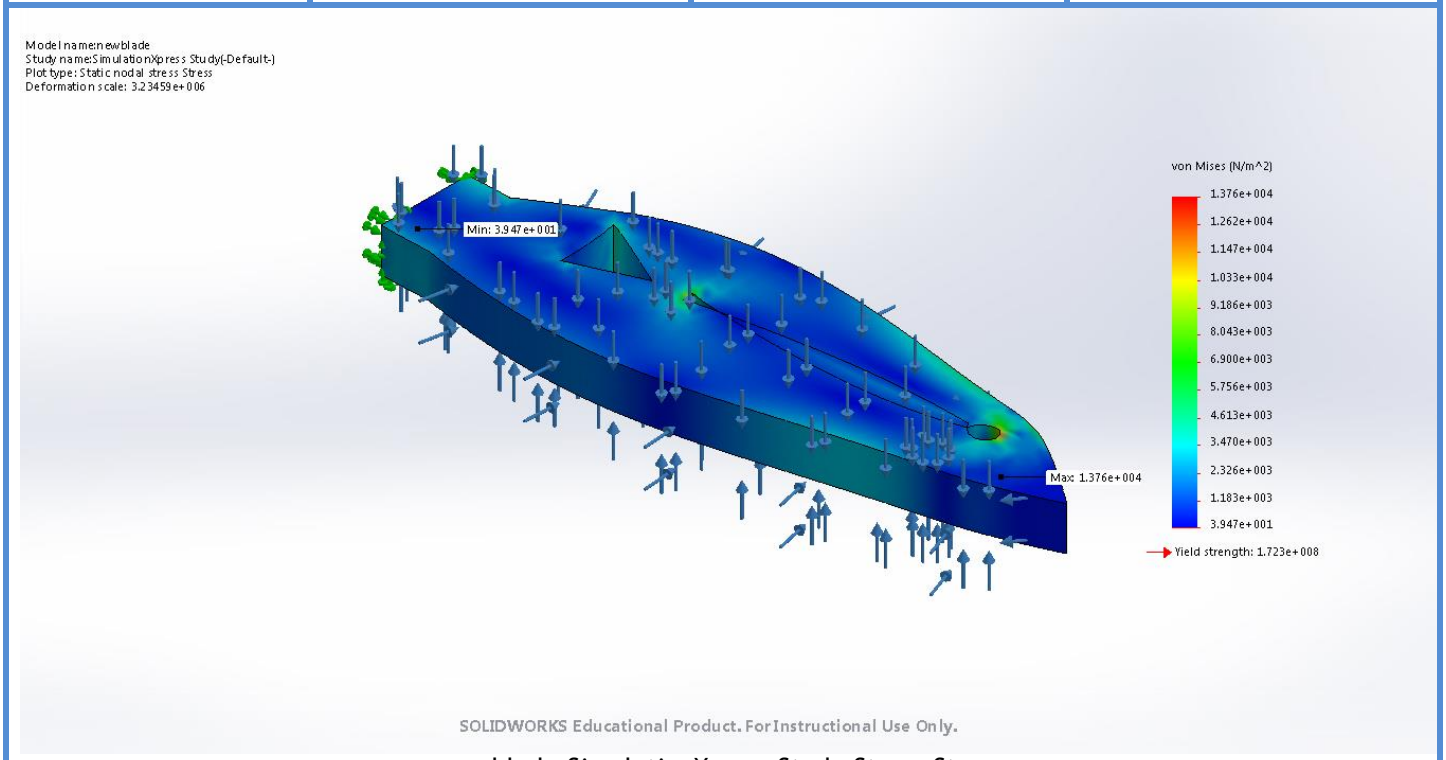
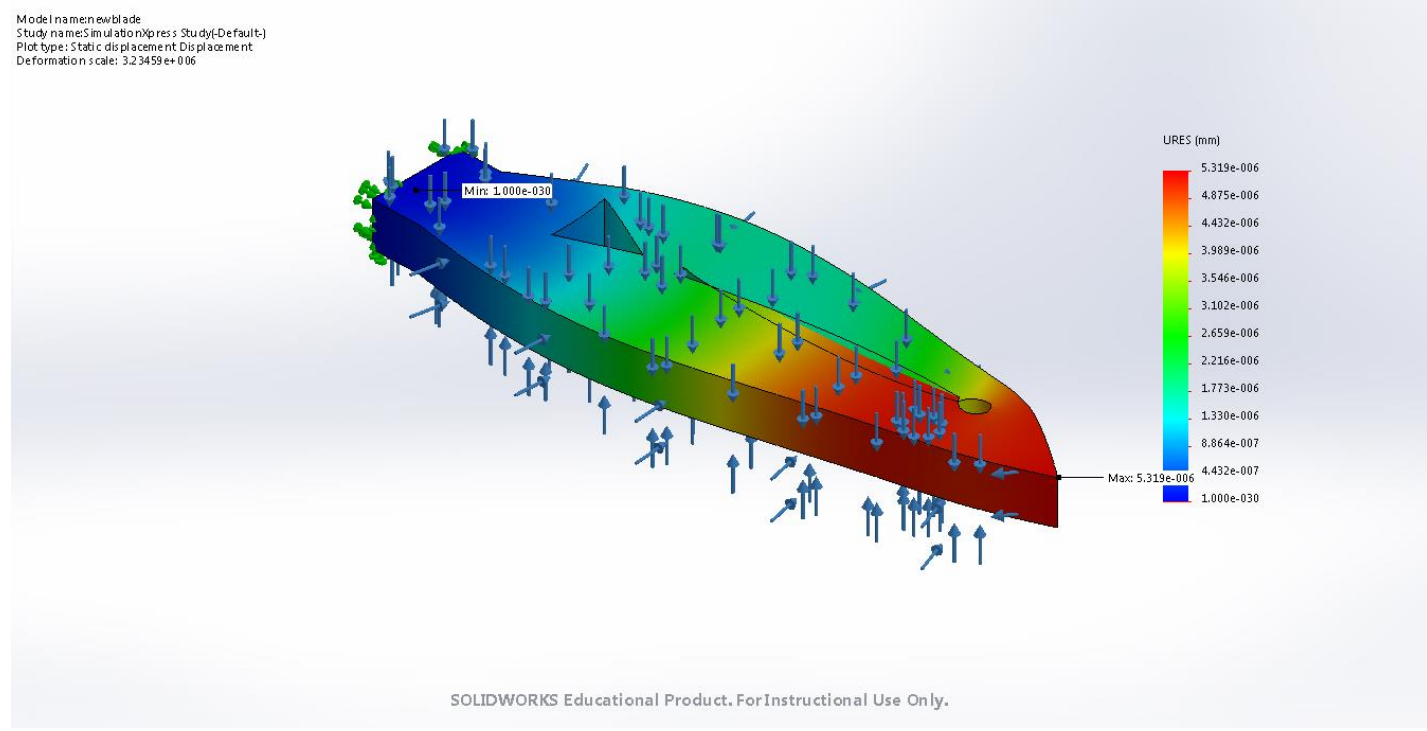
Study Results

Name	Type	Min	Max
Stress	VON: von Mises Stress	3.947e+001N/m^2 Node: 5151	1.376e+004N/m^2 Node: 11462



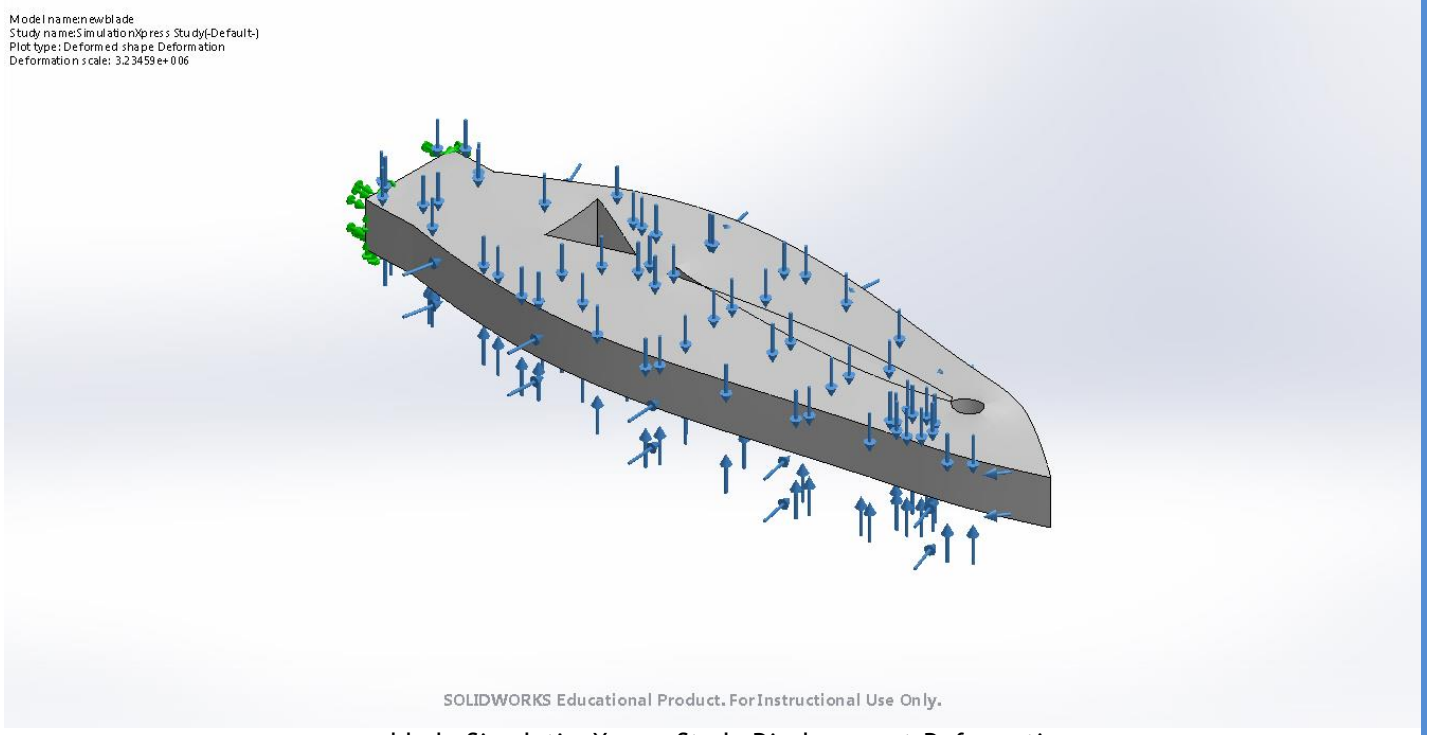
newblade-SimulationXpress Study-Stress-Stress

Name	Type	Min	Max
Displacement	URES: Resultant Displacement	0.000e+000mm Node: 116	5.319e-006mm Node: 73



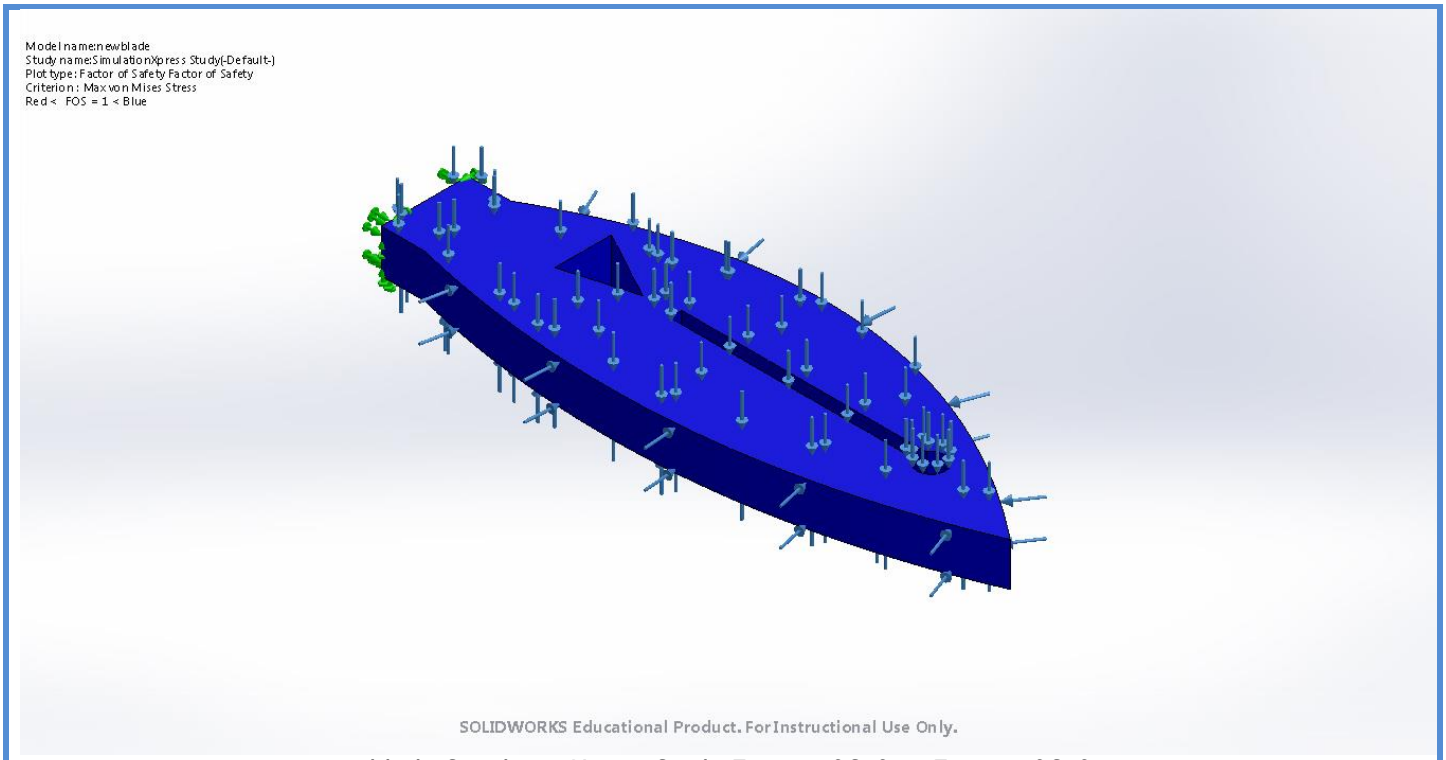
newblade-SimulationXpress Study-Displacement-Displacement

Name	Type
Deformation	Deformed shape



newblade-SimulationXpress Study-Displacement-Deformation

Name	Type	Min	Max
Factor of Safety	Max von Mises Stress	1.252e+004 Node: 11462	4.367e+006 Node: 5151



newblade-SimulationXpress Study-Factor of Safety-Factor of Safety

Conclusion