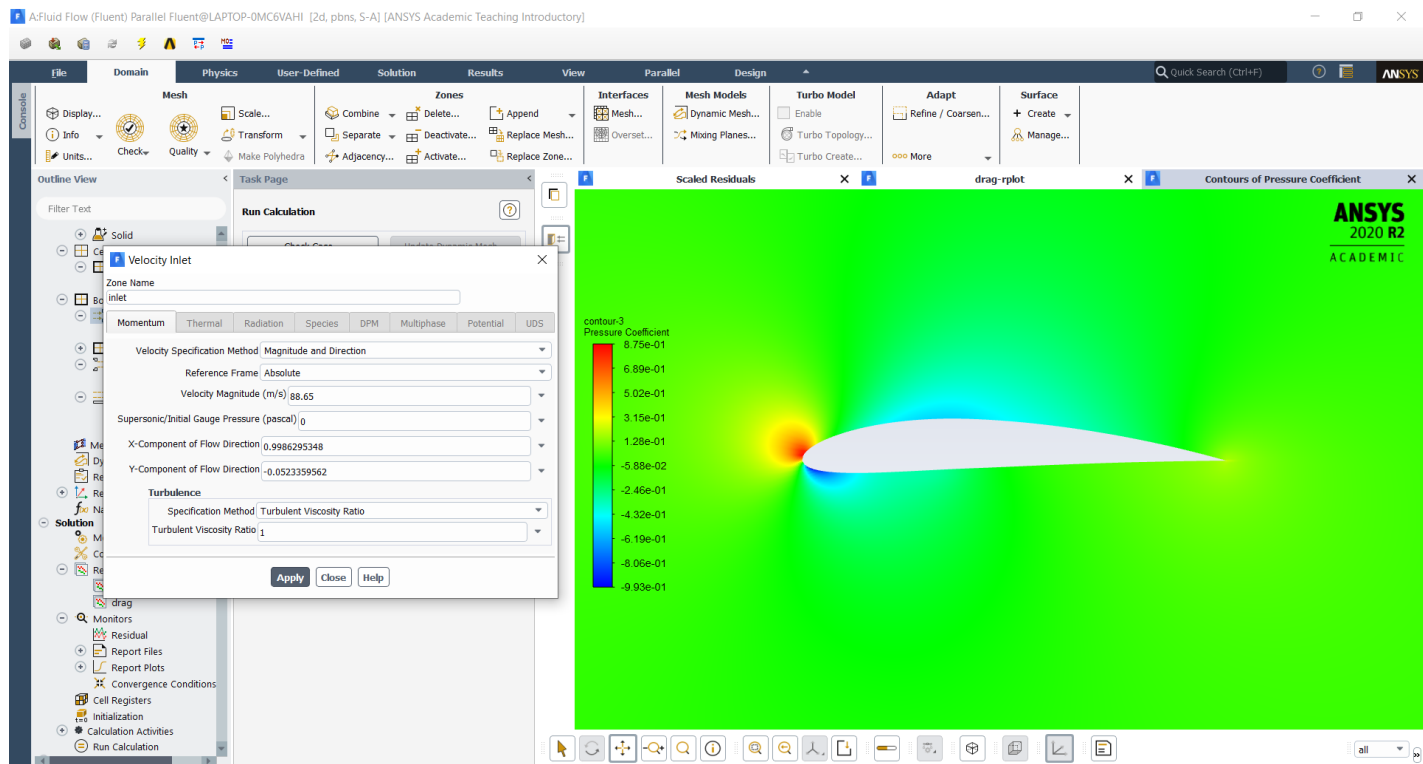


Name	Harsh Sharma
Roll no.	19AE30022

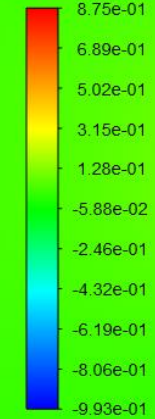
Airfoil – NACA 4412

Chord length – 1m

1. -3° angle of attack



contour-3
Pressure Coefficient



Ansaca4412 Parallel Fluent@MeraBhai [2d.pbm, sstk] [ANSYS Academic Teaching Introductory]

File Domain Physics User-Defined solution Results View Parallel Design

Mesh Models Turbo Model Adapt Surface

Mesh... Dynamic Mesh... Enable
Overset... Mixing Planes... Turbo Topology...
Turbo Crestle...

Refine / Coarsen...
+ Create
Manage...

Outline View

Filter Text

Zone Name
inlet

Momentum Thermal Radiation Species DPM Multiphase Potential UDS

Velocity Specification Method: Magnitude and Direction
Reference Frame: Absolute
Velocity Magnitude (m/s): 100
Supersonic/Initial Gauge Pressure (pascals): 0
X-Component of Flow Direction: 0.9986295347546
Y-Component of Flow Direction: -0.052335956243

Turbulence
Specification Method: Intensity and Viscosity Ratio
Turbulent Intensity (%): 5
Turbulent Viscosity Ratio: 10

Apply Close Help

Pressure Coefficient

Position (m)

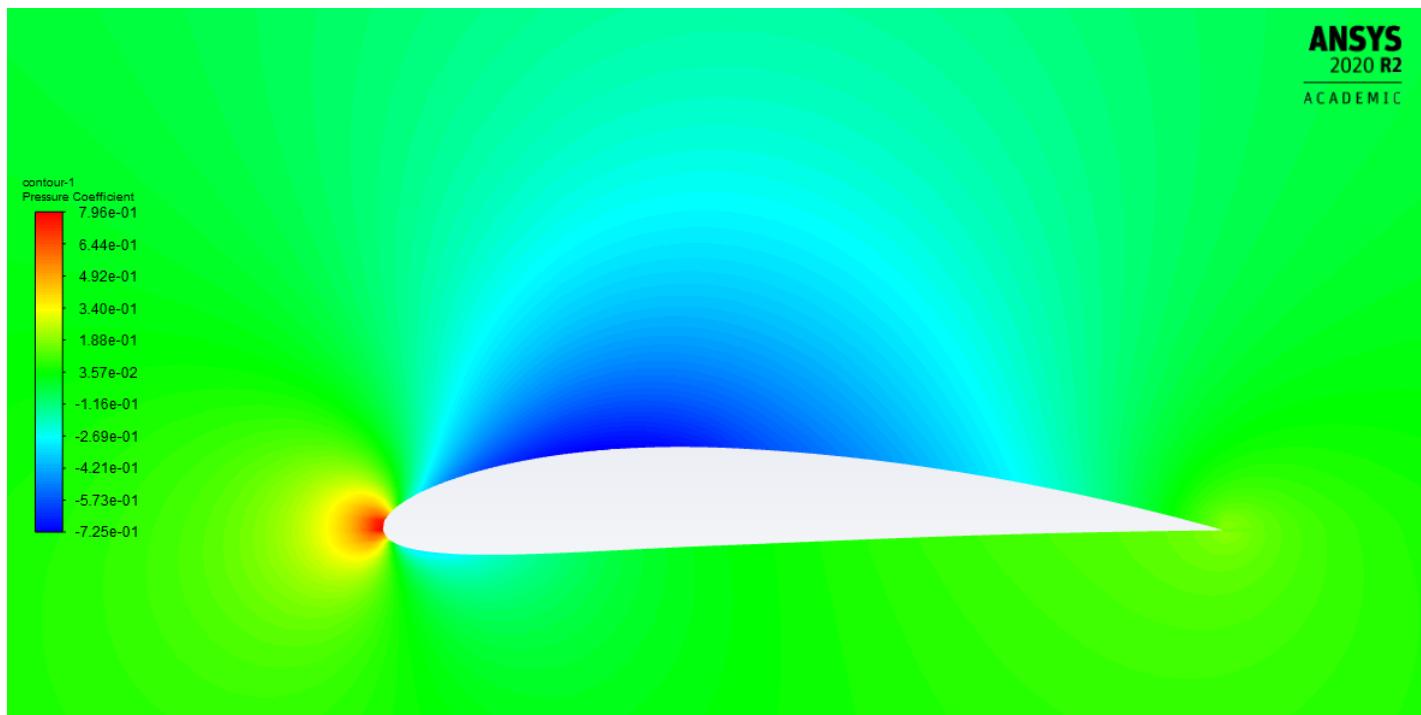
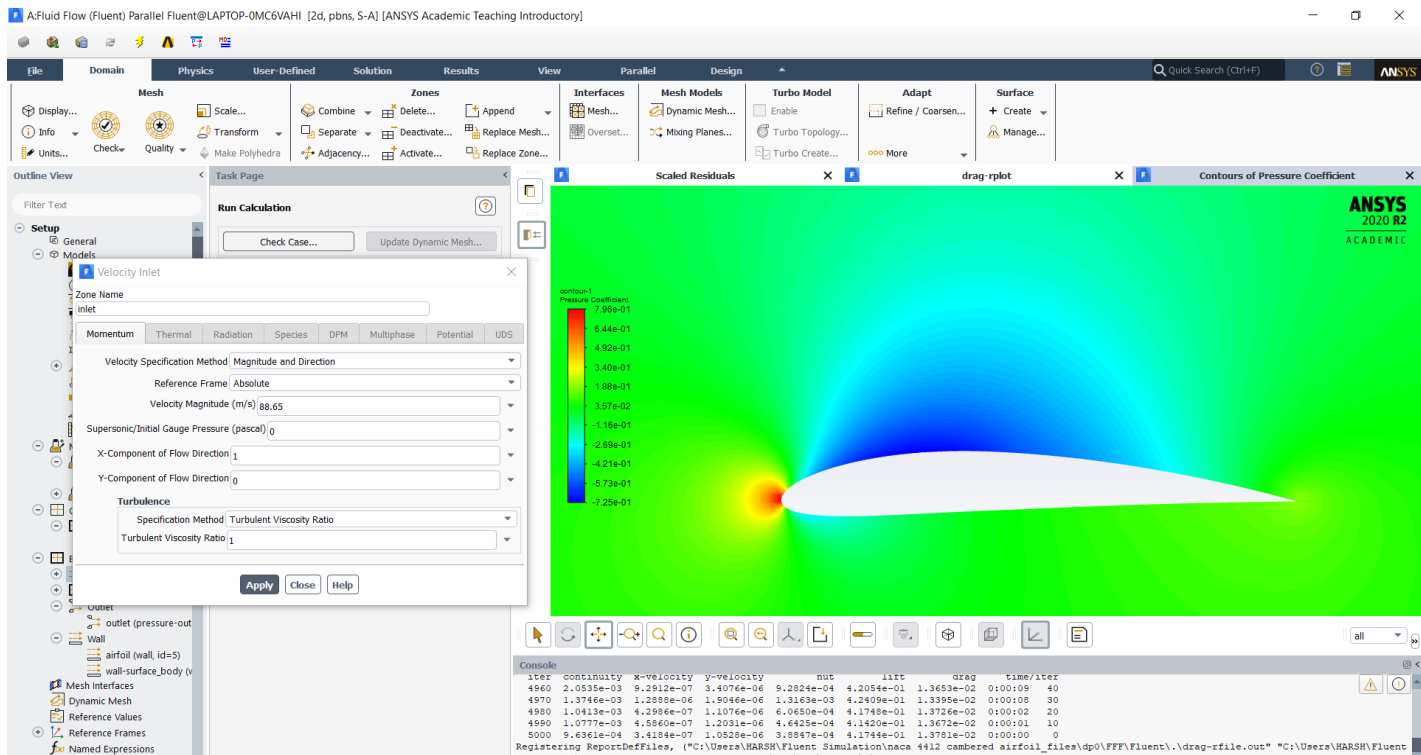
ANSYS 2020 R2 ACADEMIC

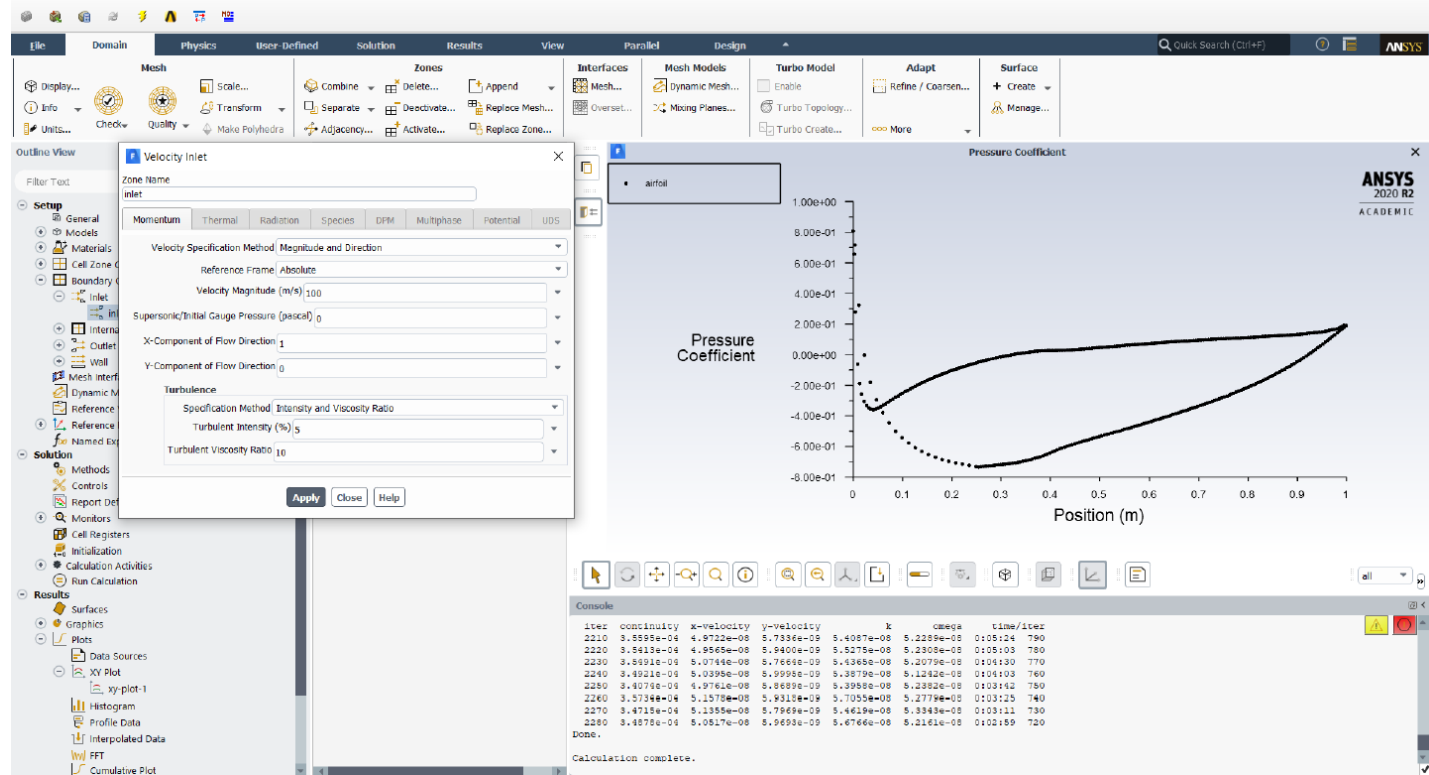
Console

Iteration	U-Mean	U-RMS	V-Mean	V-RMS	W-Mean	W-RMS	Pressure	Time (s)	Cells
2100	2.1324e-04	4.8893e-08	5.7185e-09	8.0342e-08	4.2520e-08	0.002146	900		
2110	2.1496e-04	4.9870e-08	5.7278e-09	8.2361e-08	4.2392e-08	0.002147	890		
2120	2.1528e-04	4.9290e-08	5.6724e-09	8.3387e-08	4.1597e-08	0.002130	880		
2130	2.1451e-04	5.0813e-08	5.6496e-09	8.1749e-08	4.2526e-08	0.002133	870		
2140	2.1211e-04	5.0572e-08	5.8682e-09	5.3266e-08	4.2833e-08	0.002136	860		
2150	2.1207e-04	5.0601e-08	5.6750e-09	4.5772e-08	4.3310e-08	0.002137	850		
2160	2.1418e-04	4.9178e-08	5.7640e-09	5.2068e-08	4.3363e-08	0.002138	840		
2170	2.0726e-04	4.9806e-08	5.6858e-09	5.4608e-08	4.2353e-08	0.002121	830		
2180	2.0661e-04	5.0618e-08	5.6826e-09	5.1342e-08	4.2003e-08	0.002125	820		

Done.
Calculation complete.

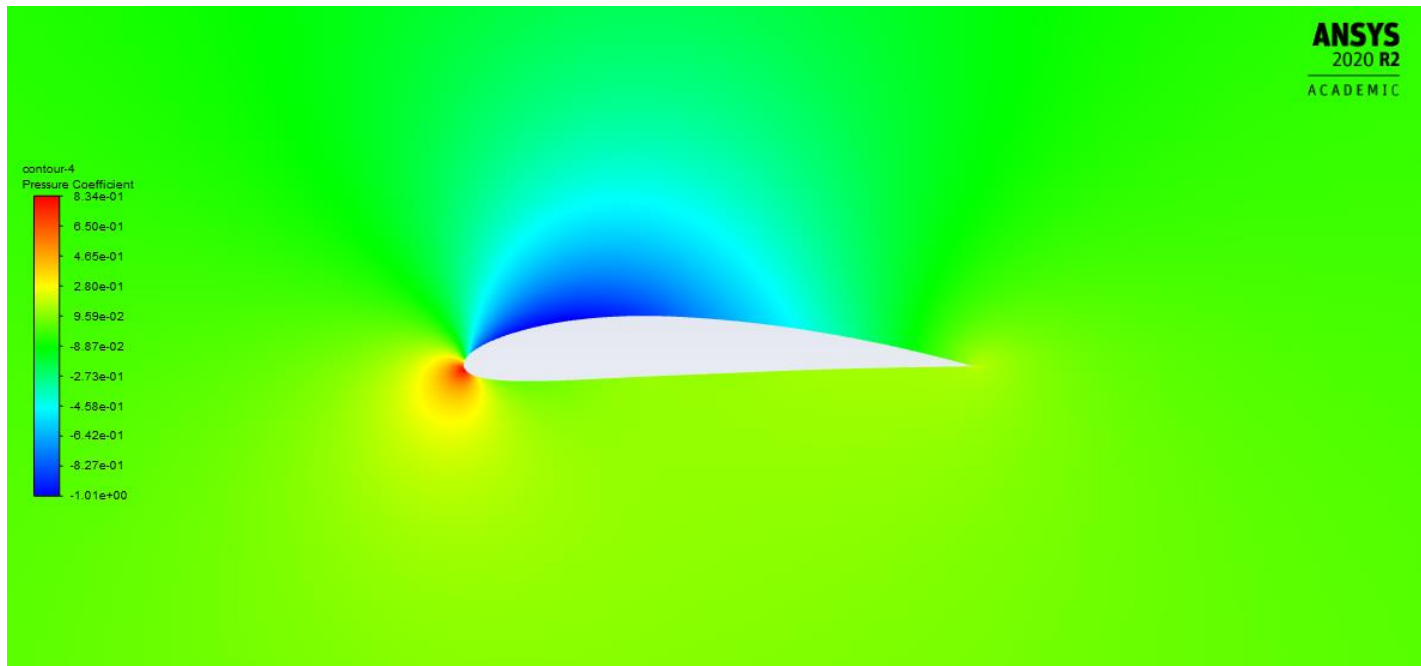
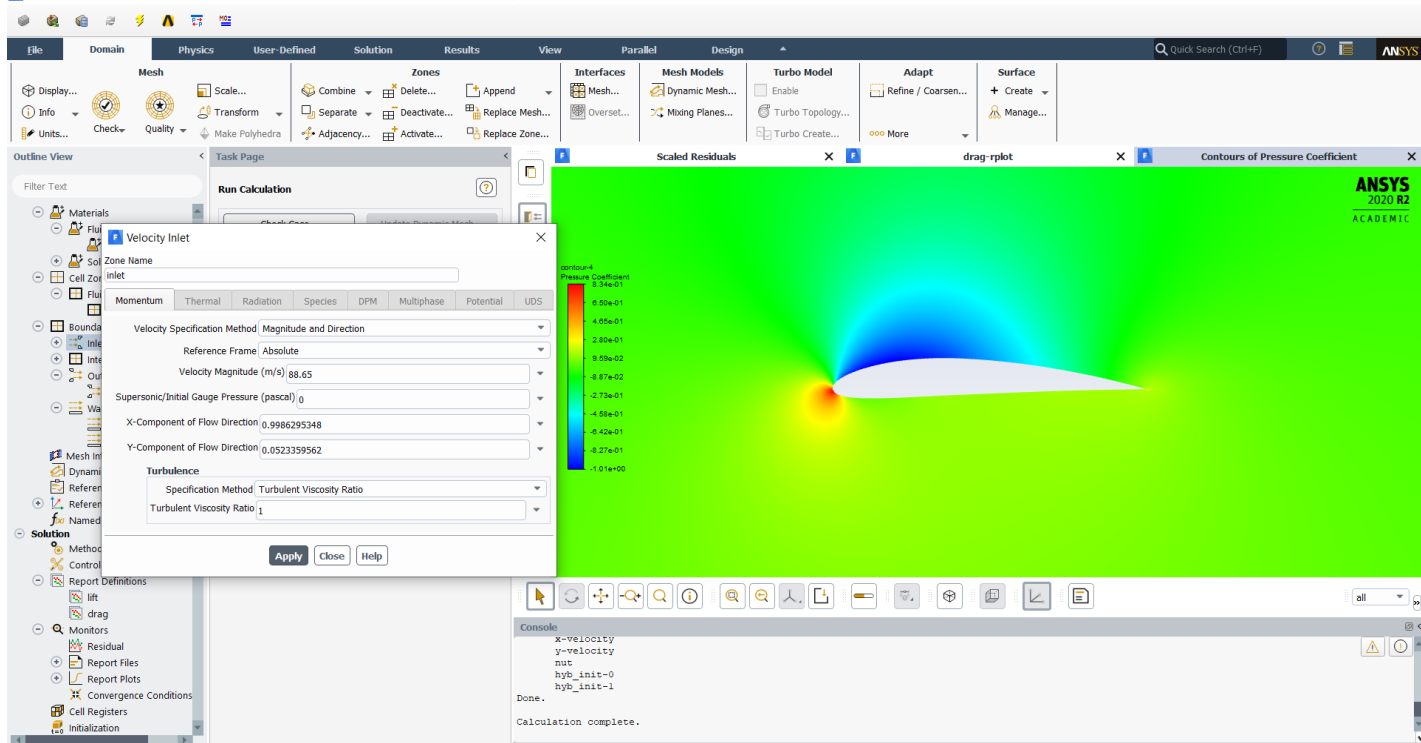
2. 0° angle of attack

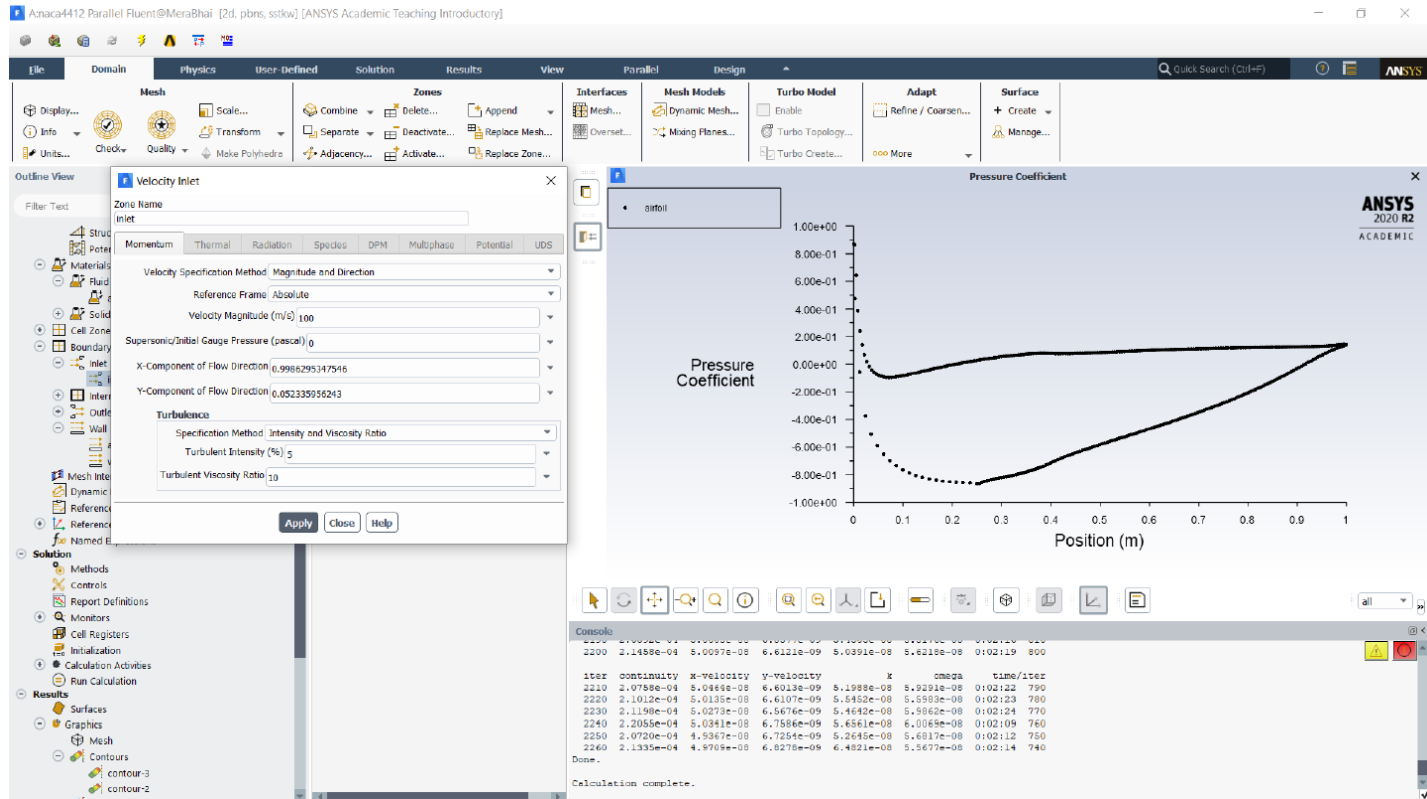




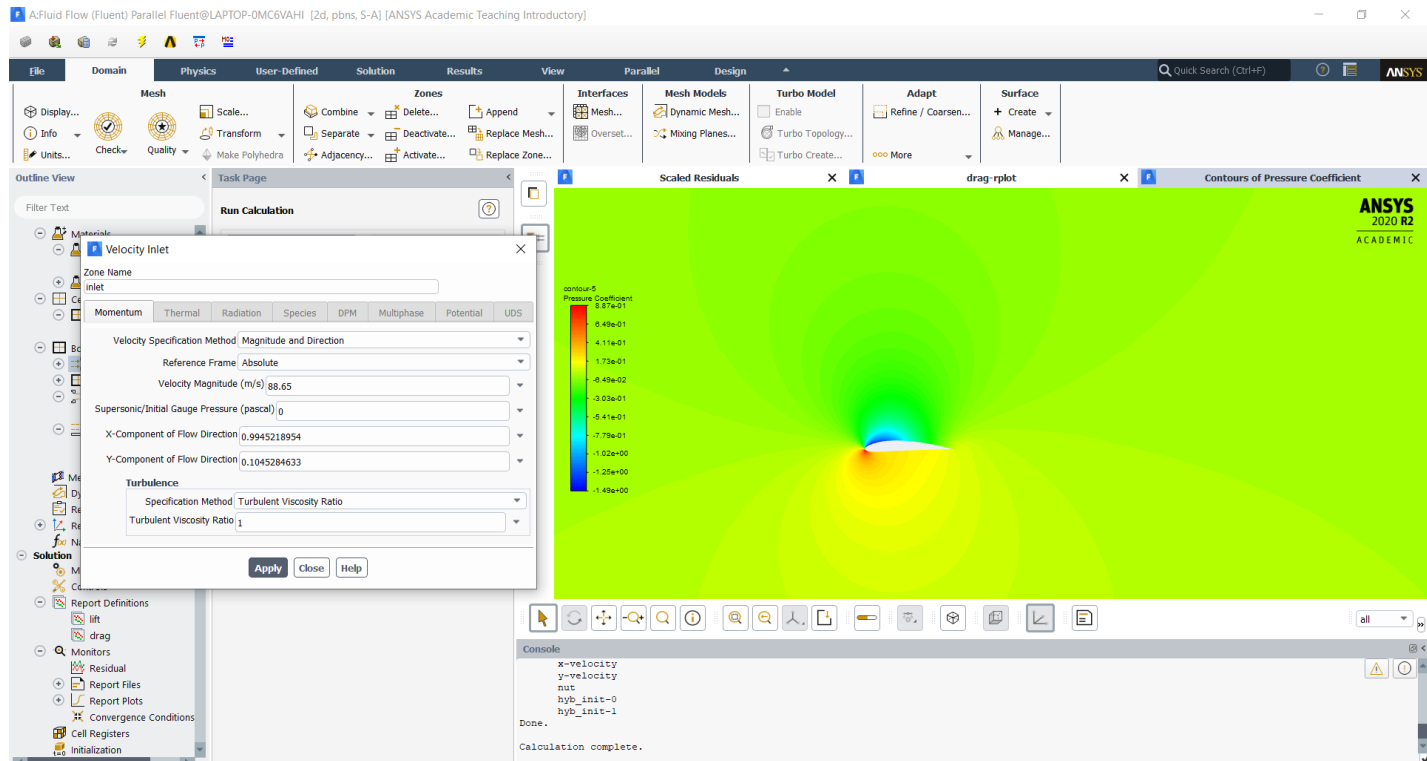
3. 3° angle of attack

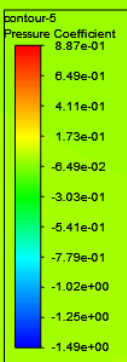
A:Fluid Flow (Fluent) Parallel Fluent@LAPTOP-0MC6VAHI [2d, pbns, S-A] [ANSYS Academic Teaching Introductory]





4. 6° angle of attack





Ansys-1412 Parallel Fluent@MeraBhai [2d, pbns, srtlow] [ANSYS Academic Teaching Introductory]

File Domain Physics User-Defined Solution Results View Parallel Design

Mesh Mesh Models Turbo Model Adapt Surface

Display... Info Check Quality Make Polyhedra Combine Delete... Append Replace Mesh... Separate Deactivate... Activate... Replace Zone... Interfaces Mesh... Dynamic Mesh... Mixing Planes... Turbo Topology... Turbo Create... More

Outline View Task Page

Filter Text

Boundaries

inlet

Velocity Inlet

Zone Name

Momentum Thermal Radiation Species DPM Multiphase Potential UDS

Velocity Specification Method: Magnitude and Direction

Reference Frame: Absolute

Velocity Magnitude (m/s): 100

Supersonic/Initial Gauge Pressure (pascal): 0

X-Component of Flow Direction: 0.9945218953683

Y-Component of Flow Direction: 0.1045284632677

Turbulence

Specification Method: Intensity and Viscosity Ratio

Turbulent Intensity (%): 5

Turbulent Viscosity Ratio: 10

Apply Close Help

Pressure Coefficient

airfoil

Pressure Coefficient

Position (m)

1.00e+00
8.00e-01
6.00e-01
4.00e-01
2.00e-01
0.00e+00
-2.00e-01
-4.00e-01
-6.00e-01
-8.00e-01
-1.00e+00
-1.20e+00

0 0.1 0.2 0.3 0.4 0.5 0.6 0.7 0.8 0.9 1

Console

```

x=0.0000
y=0.0000
pressure
x-velocity
y-velocity
k
omega
hyb_init=0
hyb_init=1
Done.
Calculation complete.

```

5. 9° angle of attack

