Mechanics of Materials II:

Thin-Walled Pressure Vessels and Torsion

Dr. Wayne Whiteman
Senior Academic Professional and Director of the Office of Student Services
Woodruff School of Mechanical Engineering

Georgia Institute of Technology

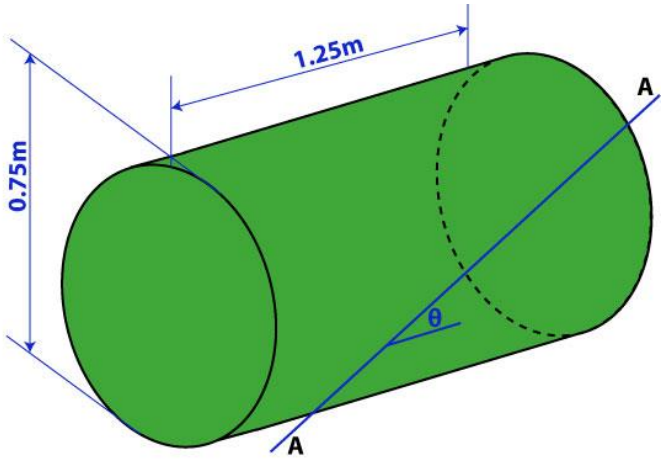
Module 8 Learning Outcome

- Solve a thin-walled pressure vessel problem

Thin-Walled Pressure Vessels

Worksheet 2:

A steel cylindrical pressure vessel has the dimensions shown below. The wall thickness of the vessel is 15 mm. The normal stress on a plane cut A-A (perpendicular to the surface of the vessel) is 100 MPa in tension. The angle θ is 30 degrees. Determine the air pressure in the pressure vessel.



Thin-Walled Pressure Vessels

Worksheet 2:

A steel cylindrical pressure vessel has the dimensions shown below. The wall thickness of the vessel is 15 mm. The normal stress on a plane cut A-A (perpendicular to the surface of the vessel) is 100 MPa in tension. The angle θ is 30 degrees. Determine the air pressure in the pressure vessel.