



**MATERIALS SCIENCE  
& ENGINEERING**  
TEXAS A&M UNIVERSITY

# Introduction to Materials Science & Engineering

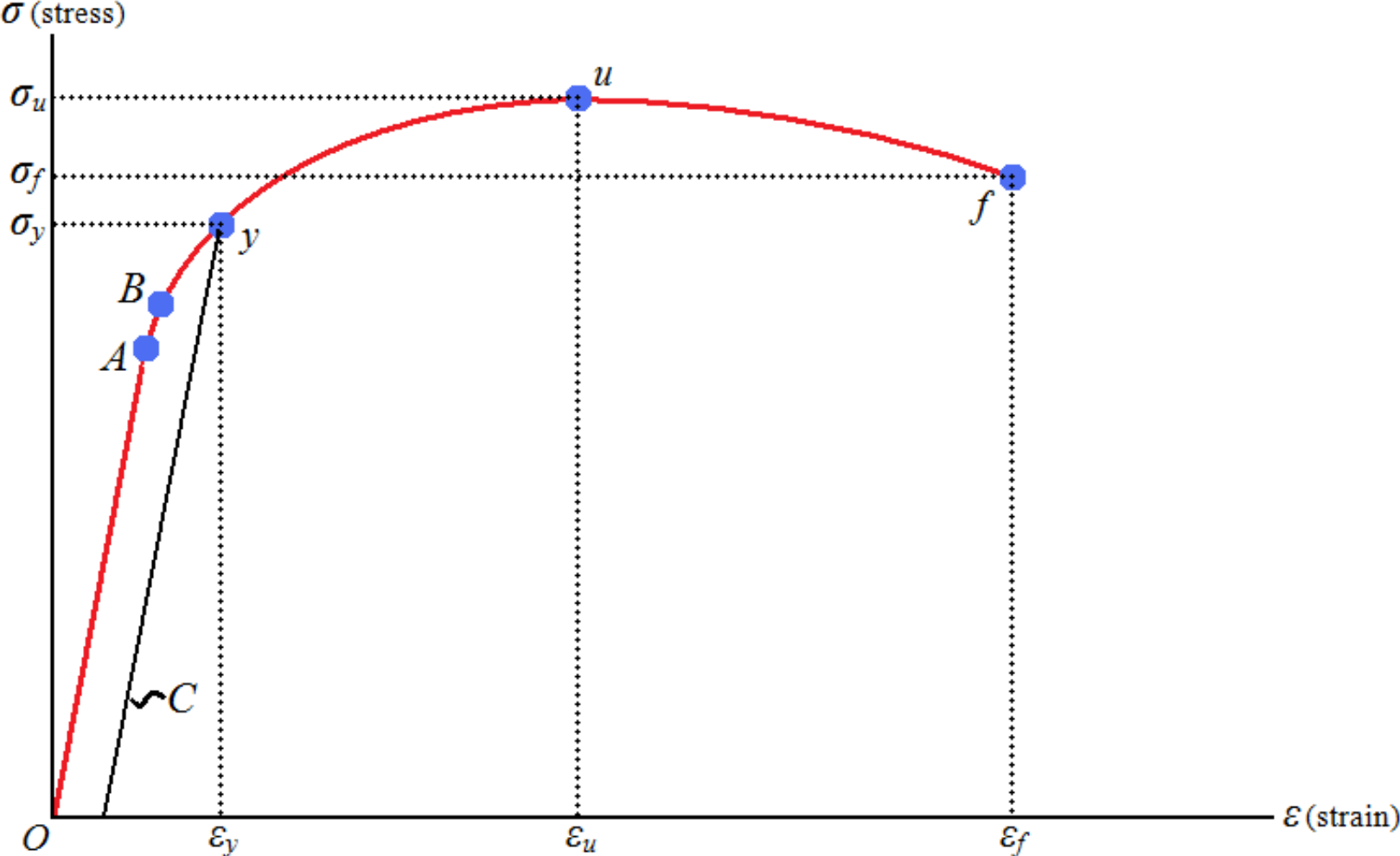
## Mechanical Properties Definition

**Dr. Patrick Shamberger**

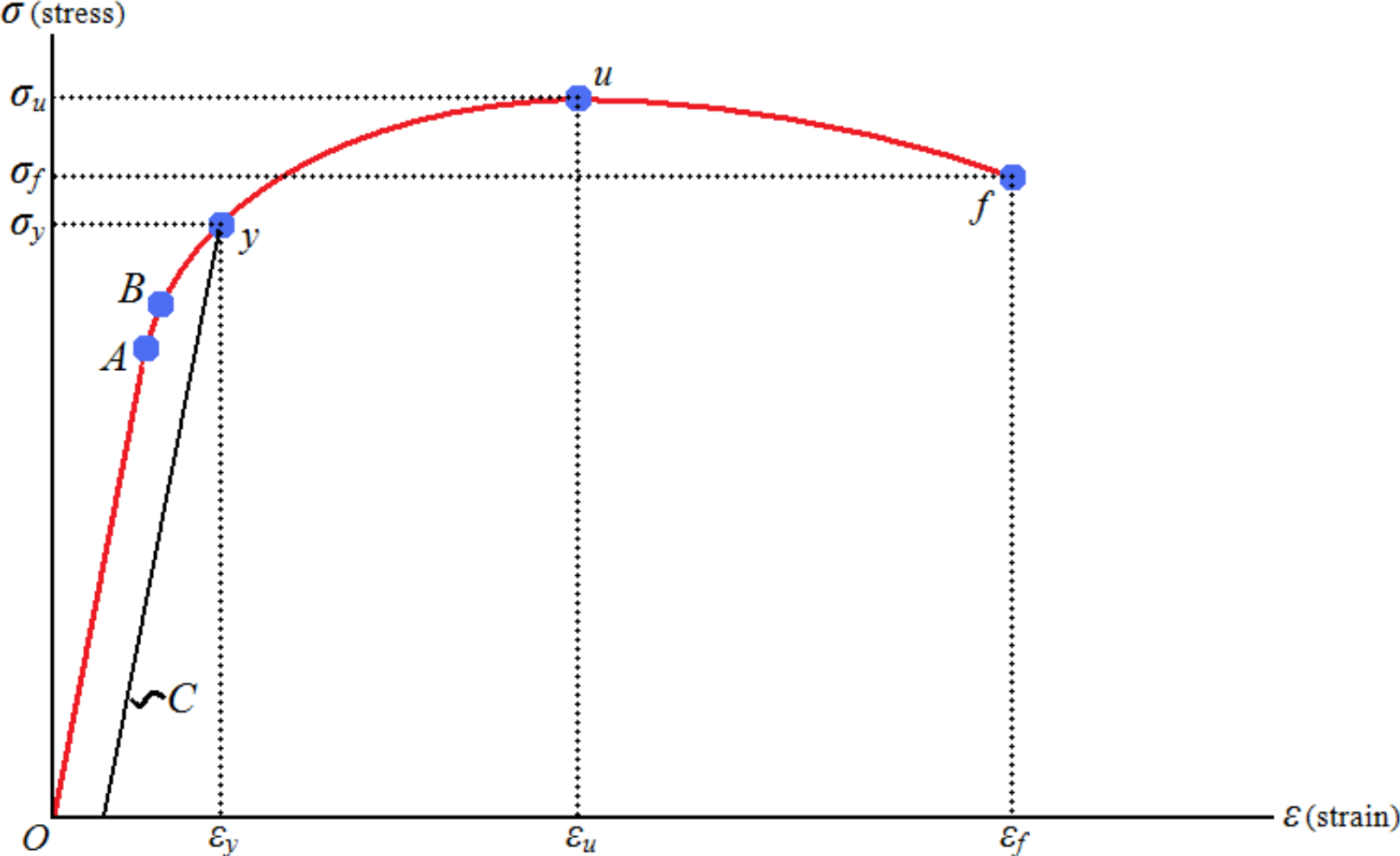
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# Stress & Strain



# Stress & Strain



# Mechanical Properties: Definitions

- Stress/Strain
- Young's Modulus (Tensile)
- Proportional Limit
- Yield Strength/Yield Point/Elastic Limit
- Ultimate stress/strength
- Failure stress/strength (rupture)
- Fracture strain (Ductility)
- Modulus of Toughness
- Modulus of Resilience