PURDUE UNIVERSITY

School of Mechanical Engineering

ME61100 – Principle of Turbulence

Fall 2020

Course Objective

- Gain a basic physical and mathematical description of turbulence phenomena.
- Understand theoretical background of methods of analysis used in turbulence study.
- Understand the principles of numerical and experimental techniques for turbulence research.
- Understand the development and application of turbulent models.

Instructor

Jun Chen, Associate Professor of Mechanical Engineering

Office: ME2145 / CHAF 129

Phone: 765-494-7050 Email: junchen@purdue.edu

Prerequisite

ME611 must be preceded by an undergraduate course in fluid mechanics or aerodynamics (ME30900 or equivalent) and should be preceded by an intermediate course in fluid mechanics (ME50900, or equivalent), as well as engineering mathematics.

Lectures

3:30-4:20PM M/W/F, Wang Hall 2555

Textbooks

Turbulent Flows, by S. Pope, Cambridge University Press

First Course in Turbulence, by H. Tennekes & J. Lumley, MIT Press

Reference Books

Turbulence, by J. Hinze, New York: McGraw-Hill

The Theory of Homogeneous Turbulence, by G. Batchelor, Cambridge University Press

Incompressible Flow, by R. Panton, J. Wiley

Evaluation Methods

- Homework and exam
- Presentation and/or projects