

AME 514

Applications of Combustion

Spring 2019, OHE 100B, W 11:00 am - 1:40 pm

Instructor: Fokion N. Egolfopoulos
Office: OHE 400B Tel: 740-0480
E-mail: egolfopo@usc.edu
Office Hours: Anytime by appointment

Teaching Assistant: Ashkan Movaghar (movaghar@usc.edu)
Office Hours: Anytime by appointment

References:

1. Combustion Physics, by C.K. Law, 1st Edition, Cambridge University Press, 2006 (required).
2. Unpublished notes updated yearly, by C.K. Law & F.N. Egolfopoulos (will be provided as needed).
3. Combustion, by Irvin Glassman and Richard A. Yetter, 4th Edition, Elsevier, 2008.
4. An Introduction to Combustion to Turbulent Reacting Flows, by R.S. Cant and E. Mastorakos, Imperial College Press, 2008.
5. Combustion Theory, by Forman A Williams, 2nd Edition, Addison-Wesley, 1985.
6. Combustion, Flames, and Explosions of Gases, by Bernard Lewis and Guenther von Elbe, 3rd Edition, Academic Press, 1987.
7. Theoretical and Numerical Combustion, by T. Poinso and D. Veynante, R.T. Edwards, Inc., 2005.

Prerequisite: AME 513 (Principles of Combustion) or equivalent

Topics:

Review of Principles of Combustion
Aerodynamics of Laminar Flames
Introduction to Modeling of Reacting Flows
Detailed Flame Structure
Ignition and Extinction Phenomena
Turbulent Reacting Flows
Detonations
Environmental Combustion Considerations

Grading:	Midterm Exam	March 20 (W)	(11:00 am-12:30 pm)	30%
	Final Exam	May 1 (W)	(11:00 am-1:00 pm)	30%
	Homework Assignments			40%

Note: The use of laptops or cell phones to access the internet/e-mail during class and/or exams is not allowed. Such devices are allowed only to access material pertaining to the class.