AME 414  
Engineering Thermodynamics II  
Spring 2022, RTH 109, M, W 12:30 pm - 1:50 pm

Instructor: Fokion N. Egolfopoulos, Professor AME Dept.  
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Office Hours: Anytime by appointment

Teaching Assistant: TBD

Text: *Fundamentals of Thermodynamics*, by Borgnakke & Sonntag (8th edition)

<table>
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<th>WEEKS</th>
<th>TOPICS</th>
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| 1     | Review of AME 310  
(Chapters 1-6) |
| 2, 3  | Second Law of Thermodynamics and Exergy  
(Chapters 7, 8) |
| 4, 5, 6, 7 | Refrigeration, Power, and Propulsion Systems (including piston engines, gas turbines, conventional and detonation jet engines, rocket engines, and scramjets for hypersonic propulsion)  
(Chapters 9, 10 & Notes) |
| 7, 8  | Gas Mixtures  
(Chapter 11) |
| 8, 9  | Thermodynamic Relations  
(Chapter 12) |
| 10, 11| Chemical Reactions  
(Chapter 13) |
| 12, 13| Introduction to Phase and Chemical Equilibrium  
(Chapter 14) |
| 14, 15| Introduction to Equilibrium Electrochemistry  
(Notes) |

Grading:  
Midterm Exam #1 February 23 (W)  
(12:45 pm - 1:45 pm)  
25%  
Midterm Exam #2 March 28 (M)  
(12:45 pm - 1:45 pm)  
25%  
Final Exam May 6 (F)  
(11:00 am - 1:00 pm)  
30%  
Homework Assignments  
20%

Remarks:  
1. Homework assignments will be given every Monday and will be due the following Monday; late work will not be accepted.