

<b>Instructor Information</b>	
Name	Dr. Zayed Al-Hamamre
Room NO.	
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Office Hours	

<b>Course Information</b>	
Course Name	Fundamentals of Combustion
Course Number	
Prerequisites	
Credit Hours	3
Semester	2 <sup>nd</sup> semester 2012/2013
Class Meeting	

<b>Course Description</b>	
Course Objectives	The course represents an introductory course on combustion where the combustion basics are introduced.
References	<ol style="list-style-type: none"> <li>1. Irvin Glassman and Richard Yetter, Combustion, Academic Press; 4 edition (September 8, 2008)</li> <li>2. J. Warnatz, U. Maas and R.W. Dibble, Combustion: Physical and Chemical Fundamentals, Modeling and Simulation, Experiments, Pollutant Formation, Springer; 3rd edition (February 23, 2001).</li> <li>3. Lecture note</li> </ol>

<b>Course Assessment</b>		
	Points	Date
1 <sup>st</sup> exam	25%	
2 <sup>nd</sup> exam	25%	
Final Exam	50.0%	

<b>Course Contents</b>
<ul style="list-style-type: none"> <li>✓ Introduction to combustion.</li> <li>✓ Combustion thermodynamics</li> <li>✓ Balance on combustion systems</li> <li>✓ Chemical kinetics and the chemistry of combustion</li> <li>✓ Ignition and Ignition Limits</li> <li>✓ Laminar Flame Theory</li> <li>✓ Turbulent Combustion</li> <li>✓ Pollutants of Combustion</li> <li>✓ Combustion of Liquid and Solid Fuels</li> <li>✓ Numerical Simulation</li> <li>✓ Measurement Techniques of Combustion Processes</li> <li>✓ Applied Aspects of Turbulent Combustion</li> <li>✓ Technical Burner Systems</li> <li>✓ Internal Combustion Engines</li> </ul>

### Prerequisite

Student who attend this course **MUST** be familiar with

- ✓ Basic mathematics: Integration and differentiation.
- ✓ Basic physical definitions and concepts.
- ✓ Thermodynamics concepts

### Responsibilities

To succeed in this class, you should read the relevant material before coming to class, make a reasonable effort to do the assigned homework, hand in what you accomplish, and ask questions on points that you do not understand. I will lecture on points in the book and on supplemental topics, attempt to answer all serious questions, make myself available to anyone needing extra help, administer fair but demanding exams, and grade and return assignments in a reasonable time.

### Expected Course Outcomes

After studying this course, students shall master basic theoretical knowledge well, understand important concepts and basic principles of combustion.

### Regulations

#### **I. Attendance:**

Attendance of classes is obligatory. Absence must be verified according to the university's regulation, ***please take it serious.***

#### **II. Quizzes and homework**

All students are required to finish their homework assignments, and submit them on time. Late homework ***will not be accepted*** under any circumstances. Popup quizzes will be given without any prior notice. You need to come prepared to class. A hand calculator is recommended to be available in every class. In addition to the final exam, there will be one midterm exam. These exams will be challenging and comprehensive during the class

#### **IV. Conduct in classroom:**

While in the class room, all cell phones, Laptops need to be turned off.