

# **COMBUSTION THEORY**

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## **COURSE OUTLINE**

1. Conservation equations for chemically-reacting mixtures
2. Chemical kinetics
3. Adiabatic flame temperature and stoichiometry
4. Deflagrations and Detonations
5. Scaling and general considerations
6. The structure of a planar premixed flame
7. Premixed flames - hydrodynamic considerations
8. Stretched flames and Lewis number effects
9. Ignition and extinction
10. Flame instabilities
11. Diffusion flames
12. The structure of diffusion flames, mixture fraction formulation
13. Droplets and sprays
14. Turbulent combustion
15. The turbulent flame speed