In the name of God

CFD
Course outline and study Guide

- **Textbook**: An Introduction to Computational Fluid Dynamics, The Finite Volume Method by: H. K. Versteeg and W. Malalasekera

Other Reference:

Computational Fluid Dynamics: A Practical Approach, 2008, by Jiyuan Tu, Guan Heng Yeoh, and Chaoqun Liu

Numerical Heat Transfer and Fluid Flow by S. Patankar

Course outline

Week	Contents	Chapter
1	Introduction	**#1 & #2**
2	The Finite Volume Method for Diffusion Problem	**#4**
3	Working on HW #1 (code developing)	
4	The Finite Volume Method for Convection-Diffusion Problem	**#5**
5	Working on HW #2 (code developing)	
6	Solution Algorithm for Pressure-Velocity Coupling in steady Flows	**#6**
7	Working on HW #3	
8	The Finite Volume Method for unsteady Flows	**#8**
9	Working on HW #4 (code developing)	
10	Implementation of Boundary Conditions	**#9**
11	Working on HW #5 (code developing)	
12	Turbulence Modeling	**#3**
13	Stability	**Hand note**
14	Error and Uncertainty in CFD Modelling	**#10**
15	Presenting project	
16	Presenting project	

Marks:

- Homework (30%)
- Final Exam and Project (70%)