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COURSE SCHEDULE OF AQS110 FLUID MECHANICS FOR PROGRAMME OF FISHERIES AND AQUACULTURE

Weeks	Topics
Week 1	1. INTRODUCTION 1.1. What is a Fluid? 1.2. Application Areas of Fluid Mechanics 1.3. Dimensions, Dimensional Homogeneity, and Units 1.3.1. Systems of Units
Week 2	2. PROPERTIES OF FLUIDS 2.1. Measures of Fluid Mass and Weight 2.1.1. Density 2.1.2. Specific Weight 2.1.3. Specific Gravity 2.2. Density of Ideal Gases 2.3. Vapor Pressure
Week 3	2. PROPERTIES OF FLUIDS 2.4. Viscosity 2.5. Compressibility of Fluids 2.5.1. Bulk Modulus
Week 4	2. PROPERTIES OF FLUIDS 2.5.2. Compression and Expansion of Gases 2.5.3. Speed of Sound 2.5.4. Surface Tension EXAMPLES
Week 5	3-FLUID STATICS 3.1. Pressure at a Point 3.2. Basic Equation for Pressure Field 3.3. Pressure Variation in a Fluid Rest 3.3.1. Incompressible Fluid 3.3.2. Compressible Fluid 3.4. Standard Atmosphere
Week 6	3-FLUID STATICS 3.5. Measurement of Pressure 3.6. Manometry 3.6.1. Piezometer Tube 3.6.2. U-Tube Manometer 3.6.3. Inclined-Tube Manometer 3.7. Hydrostatic Force on a Plane Surface

Weeks	Topics
Week 7	3-FLUID STATICS 3.8. Hydrostatic Force on a Curved Surface 3.9. Buoyancy and Floatation 3.10. Pressure Variation in a Fluid with Rigid-Body Motion 3.10.1. Linear Motion 3.10.2. Rigid-Body Rotation EXAMPLES
Week 8	4. ELEMENTARY FLUID DYNAMICS -THE BERNOULLI EQUATION 4.1. Newton's Second Law 4.2. $F=ma$ Along the Streamline 4.3. $F=ma$ Normal to a Streamline 4.4. Static, Stagnation, Dynamic, and Total Pressure
Week 9	4. ELEMENTARY FLUID DYNAMICS -THE BERNOULLI EQUATION 4.5. Examples of Use of the Bernoulli Equation 4.5.1. Free Jet 4.5.2. Confined Flows
Week 10	4. ELEMENTARY FLUID DYNAMICS -THE BERNOULLI EQUATION 4.5.2.1. Cavitation 4.5.3. Flowrate Measurement EXAMPLES
Week 11	5. FLOW IN PIPES 5.1 General Characteristics of Pipe Flow 5.1.1. Laminar or Turbulent Flow 5.1.2 Entrance Region and Fully Developed Flow
Week 12	5. FLOW IN PIPES 5.1.3. Pressure and Shear Stress 5.2. Fully Developed Laminar Flow 5.2.1. Laminar Flow in Noncircular Pipes
Week 13	5. FLOW IN PIPES 5.3. Fully Developed Turbulent Flow 5.4. Pipe Flowrate Measurement 5.4.1 Pipe Flowrate Meters
Week 14	5. FLOW IN PIPES EXAMPLES

The following references are used in the preparation of this course.

1-Cengel Yunus A., Cimbala John M..2006. Fluid Mechanics Fundamentals and Applications. 1rd Edition P.959, McGraw-Hill ,USA

2-Cengel Yunus A., Cimbala John M. 2010. Solutions Manual for. Fluid Mechanics: Fundamentals and Applications. Second Edition, McGraw-Hill, USA

3-Güner, M ve Keskin, R., 2013. Akışkanlar Mekaniği. Ankara Üniversitesi Ziraat Fakültesi Yayınları: 1608, Ders Kitabı: 560, S.261, Ankara.

4-Munson, B.R., D.F., Young ve T.H. OkuŖı, 1994. Fundamentals of Fluid Mechanics. John Wiley and Sons, Inc.,USA.