Lectures: Monday and Wednesday between 16:00-17:15 in SOS-B10
Office Hour: Wednesday 14:45-15:45 or by appointment
PS Section: Friday between 8:30-9:45 in SOS-B10
TAs: Recep Bakar (rbakar@ku.edu.tr), Berk Altunkeyik (berkaltunkeyik@gmail.com), İbrahim Nasuh Yıldıran (yildiran90@gmail.com)
(Office: Z-20; TA office hours: TBA)
Tutors: TBA
Course Homepage: http://home.ku.edu.tr/~mmuradoglu/ME301/index.htm
Objectives: The course is designed to teach students the basic principles of the fluid mechanics at an introductory level.

Topics to be covered (Tentative): Basic concepts, hydrostatics, Bernoulli’s equation, fluid kinematics, integral relations and finite control volume analysis, differential relations, vorticity, stream function, potential flow, similitude and dimensional analysis, viscous flow in pipes and ducts and boundary layer theory.

Learning Outcomes:
Upon successful completion of this course, a student will:
- understand the basic concept of fluid;
- compute forces and moments acting on surface immersed in fluid under hydrostatic conditions;
- derive the mass, momentum and energy conservation equations of fluid motion in integral and differential forms;
- reduce the general flow equations to simplified versions in Cartesian and cylindrical coordinates and solve them for simple flows;
- use Buckingham’s Pi theorem to develop dimensionless groups and apply similarity and modelling procedures;
- understand the characteristics of laminar and turbulent flows
- analyse losses in piping system;
- understand the concept of boundary layer, flow separation and flow control;
- Estimate lift and drag forces on aircrafts, ships and other moving vehicles.

Attendance: Students must attend at least 2/3 of all lectures according to Koç University regulations. Therefore, missing 10 or more lectures (days with a health report are also included) will result in an F grade. Students are also expected to attend the problem sessions.

Exam Policy: All exams will be in-class. A student who arrives late to an in-class examination may not enter the room. Nobody will be allowed to go out for any reason (e.g., restroom) unless he/she has a valid medical excuse.

Makeup Policy: If a student has a valid excuse for missing the exam, a makeup will be given at the end of the semester. No makeup will be given for the quizzes but the lowest quiz grade will be dropped.

HWs and Quizzes: You may discuss homework problems with others, but the work you hand in must be your own. Homework sets are due in Homework Box on Wednesday until 15:45pm unless specified otherwise; no late homework will be accepted. Quizzes will be given in lecture/PS time and quiz questions will be the same or similar to HW questions.
**CFD Projects:** CFD projects will be assigned and will be graded towards your final grade. OpenFOAM will be used as a standard CFD package and tutorial sessions will be held during the PS time. It is not required but you are strongly recommended to use your own labtop.

**Grading:**

1) Attendance (Lectures + PSs)  
2) Quizzes, Homework Assignments & Project  
3) Midterm Exam  
4) Final Exam

**Grading:**

1) Attendance (Lectures + PSs)  
   - 4%
2) Quizzes, Homework Assignments & Project  
   - 22%
3) Midterm Exam  
   - 44% (22% each)
4) Final Exam  
   - 30%

**Time commitment and ECTS credit:**

<table>
<thead>
<tr>
<th>Activity</th>
<th>Number</th>
<th>Time (hrs)</th>
<th>Predicted Total Work Load (hrs)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lectures</td>
<td>2x14=28</td>
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<td>35</td>
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<tr>
<td>PS and Quizzes</td>
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<td>HWs and Project</td>
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<td>Lab</td>
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<td>Midterm Exams</td>
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<tr>
<td>(a) Exam</td>
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<td>2</td>
<td>4</td>
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<tr>
<td>(b) Preparation</td>
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<td>15</td>
<td>30</td>
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<tr>
<td>Final</td>
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<tr>
<td>(a) Exam</td>
<td>1</td>
<td>2.5</td>
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<tr>
<td>(b) Preparation</td>
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<td>Total Work Load</td>
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ECTS Credit: Total Work Load (hrs)/30* = 5.97 ~ 6

* 30 hours of work load is assumed to be 1 ECTS credit

**Academic Regulations-Academic Integrity**

Academic dishonesty in the form of cheating, plagiarism, or collusion are serious offenses and are not tolerated at Koç University. University Academic Regulations and the Regulations for Student Disciplinary Matters clearly define the policy and the disciplinary action to be taken in case of academic dishonesty. Failure in academic integrity may lead to suspension and expulsion from the University. Cheating includes, but is not limited to, copying from a classmate or providing answers or information, either written or oral, to others. Plagiarism is borrowing or using someone else’s writing or ideas without giving written acknowledgment to the author. This includes copying from a fellow student’s paper or from a text (whether printed or electronic) without properly citing the source. Collusion is getting unauthorized help from another person or having someone else write a paper or assignment.