<table>
<tr><td>**강좌 키워드</td><td colspan="8">Fluids, Conservation Law, Viscosity, Pressure, Navier-Stokes equation, Bernoulli equation</td></tr>
<tr><td>*1. 수업목표</td><td colspan="8">In order to understand and analyze the flow of fluids in various high-tech and environmental fields, the purpose of this lecture is to derive a governing equation that explains the basic concepts of fluids, and learn the basic theories and concepts necessary for this.</td></tr>
<tr><td rowspan="2">**2. 교재 및 참고문헌</td><td>교재</td><td colspan="7">Fluid Mechanics by F. M. White (McGraw-Hill Higher Education)</td></tr>
<tr><td>참고문헌</td><td colspan="7"></td></tr>
<tr><td rowspan="3">**3. 강의계획</td><td>주요 수업방식</td><td colspan="7">☐Flipped learning ■Theory-driven ☐Discussion-oriented
☐Project-based ☐Others</td></tr>
<tr><td colspan="8">- Concept of fluid, Continuum, Properties of fluid flow, Dimensions and units, Basic flow analysis techniques, Flow patterns
- Pressure and pressure gradient, Hydrostatic pressure, Manometer
- Hydrostatic forces on various planes, Buoyancy, Stability, Pressure measurement
- 중간고사1
- Basic physical laws of fluid mechanics, Reynolds transport theorem
- Mass and momentum conservation laws (Integral laws)
- Bernoulli equation, Energy equation
- Equations for mass and linear momentum conservation - continuity and Navier-Stokes equation
- Angular momentum theorem, Boundary condition, Stream function, Vorticity and irrotationality
- 중간고사2
- Principle of dimensional homogeneity, Non-dimensional parameters
- Pi theorem, Modeling
- Internal flow, Reynolds number, Classification of laminar and turbulent flows
- Circular pipe flow, Non-circular pipe flow, Minor losses, Diffuser flow
- Boundary layer theory, Introduction to various flow phenomena in industries and nature
- 기말고사</td></tr>
<tr><td rowspan="5">*4. 평가방법</td><td>성적부여 방식</td><td colspan="7">Relative evaluation</td></tr>
<tr><td>등급제 여부</td><td colspan="7">A~F</td></tr>
<tr><td colspan="9"><table>
<tr><td>구분</td><td>출석</td><td>과제</td><td>중간</td><td>기말</td><td>수시평가</td><td>태도</td><td>기타</td><td>합계</td></tr>
<tr><td>비율</td><td>10</td><td>15</td><td>40</td><td>35</td><td></td><td></td><td></td><td>100%</td></tr>
<tr><td>비고</td><td></td><td>5 times</td><td>2 times</td><td></td><td></td><td></td><td></td><td></td></tr>
</table></td></tr>
<tr><td>출석 규정</td><td colspan="7">Students who are absent more than 1/3 of class days will receive “F” or “U” grade.Students whose attendance is acknowledged can be exceptions. (Academic Grading Regulations, Guidance of Attendance and Grading for Early Employed Students)</td></tr>
<tr><td>기타 사항</td><td colspan="7"></td></tr>
<tr><td>5. 정원 외 신청</td><td>추가 수용 인원</td><td colspan="7">up to 5</td></tr>
<tr><td rowspan="3">6. 수강생 참고사항</td><td>선이수 교과목</td><td colspan="7"></td></tr>
<tr><td>수강 시 필요사항</td><td colspan="7"></td></tr>
<tr><td>면담시간 및 장소</td><td colspan="7">By appointment</td></tr>
</table>

◎ 강의계획서 직접입력 시 필수 입력 항목: *, **
◎ 강의계획서 첨부파일 업로드 시 필수 입력 항목: **