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Course Information

COURSE INFORMATION

Course Title	Code	Semester	L+U Hour	Credits	ECTS
Fluid Dynamics In Physics	FZ5045		3 + 0	3.0	7.5

Prerequisites	None
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Language of Instruction	Turkish
Course Level	Second Cycle
Course Type	Elective
Mode of delivery	Face to face
Course Coordinator	Assoc. Prof. Dr. Hüseyin ÇAVUŞ
Instructors	Assoc. Prof. Dr. Hüseyin ÇAVUŞ
Assistants	
Course Objectives	Subjects of hydrodynamic used in physics are explained after giving fundamental concepts of fluids.
Course Content	The students who succeeded in this course; can make comment about the definition of fluid and fluid mechanics can investigate advanced level papers about fluid mechanics.
Course Learning Outcomes	1) to make comment on the definition of definition of fluid and fluid mechanics 2) to investigate advanced level papers about fluid mechanics.

WEEKLY COURSE CONTENT

Week	Topics	Teaching and Learning Methods and Techniques	Study Materials
1. Week	Thermodynamic reminders	Oral lectures Homeworks Interactive discussions	
2. Week	Flow regimes (subsonic, transonic, supersonic)	Oral lectures Homeworks Interactive discussions	
3. Week	Incompressible flows	Oral lectures Homeworks Interactive discussions	
4. Week	Compressible flows	Oral lectures Homeworks	

Quick Access

Physics (Master)

- Qualification Awarded
- Level of Qualification
- Qualification Requirements and Regulations
- Specific Admission Requirements
- Recognition of Prior Learning
- Profile of the Program
- Program Key Learning Outcomes
- Occupational Profile of Graduates
- Access to Further Studies
- Course Structure & Credits
- Exam Regulations & Assessment & Grading
- Graduation Requirements
- Mode of Study
- Programme Director(or Equivalent)
- Evaluation Questionnaire
- TYYÇ

Course Information

- Course Information
- Weekly Course Content
- Resources
- Course Category
- CONTRIBUTION OF COURSE LEARNING OUTCOMES TO PROGRAMME OUTCOMES
- ECTS credits and course workload

		Interactive discussions	
5. Week	Fluid equations (Continuity, momentum transfer, energy transfer)	Oral lectures Homeworks Interactive discussions	
6. Week	One dimensional flow	Oral lectures Homeworks Interactive discussions	
7. Week	One dimensional flow	Oral lectures Homeworks Interactive discussions	
8. Week	Laminar and turbulent flows, potential flows, vorticity	Oral lectures Homeworks Interactive discussions	
9. Week	Two dimensional flow	Oral lectures Homeworks Interactive discussions	
10. Week	Two dimensional flow	Oral lectures Homeworks Interactive discussions	
11. Week	Hydrodynamic waves	Oral lectures Homeworks Interactive discussions	
12. Week	Hydrodynamic instabilities	Oral lectures Homeworks Interactive discussions	
13. Week	Hydrodynamic Shocks	Oral lectures Homeworks Interactive discussions	
14. Week	Hydrodynamic Shocks	Oral lectures Homeworks Interactive discussions	
15. Week	General Review	Oral lectures	
16. Week	Final Exam	Written Exam	

RESOURCES

Recommended Sources
Landau, L.D. and Lifshitz, E.M. 1959. Fluid Mechanics. Pergamon Press
A.R., Choudhuri, 1998, The Physics of Fluids and Plasma, Cambridge University Press.
R. Moreau, Magnetohydrodynamics, 1990, Kluwer Academic Publishing.

ASSESSMENT

Measurement and Evaluation Methods and Techniques
40% Mid Term Exam 60% Final Exam

COURSE CATEGORY

Course Category	Percentage

Core Courses	% 100
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CONTRIBUTION OF COURSE LEARNING OUTCOMES TO PROGRAMME OUTCOMES

Programme Outcomes	Contribution Level	DK1	DK2
<u>PY1</u>	1	1	1
<u>PY2</u>	3	3	3
<u>PY3</u>	3	3	3
<u>PY4</u>	3	3	3
<u>PY5</u>	4	4	4
<u>PY6</u>	4	4	4
<u>PY7</u>	4	4	4
<u>PY8</u>	3	0	0
<u>PY9</u>	3	3	3
<u>PY10</u>	1	1	1
<u>PY11</u>	3	3	3
<u>PY12</u>	3	3	3
<u>PY13</u>	3	3	3
<u>PY14</u>	3	3	3
<u>PY15</u>	3	3	3

*DK = Course's Contribution.

	0	1	2	3	4	5
Level of contribution	None	Very Low	Low	Fair	High	Very High

ECTS CREDITS AND COURSE WORKLOAD

Event	Quantity	Duration (Hour)	Total Workload (Hour)
Presentation/Seminar	2	2	4
Mid Term Exam Preparation	1	21	21
Final Exam Preparation	1	25	25
Assignment 1	1	10	10
Class Hours (14 weeks)	14	3	42
Further Study	14	2	28
Preliminary Study	14	1	14
Mid Term Exam 1	1	3	3
Final Exam	1	3	3
Research&Project	2	16	32
Assignment 2	1	10	10
Total Workload			192
Total Workload / 25.5 (s)			7.53
ECTS Credit of the Course			8

