UČNI NAČRT PREDMETA / COURSE SYLLABUS	
Predmet:	Fizika tekočin
Course title:	Physics of Fluids

Študijski program in stopnja Study programme and level	Študijska smer Study field	Letnik Academic year	Semester Semester
Fizika 2. st.		1,2	2,3
Physics 2nd degree		1,2	2,3

Vrsta predmeta / Course type	izbirni/ optional
Univerzitetna koda predmeta / University course code:	

Predavanja Lectures	Seminar Seminar	Sem. vaje Tutorial	Lab. vaje Laboratory work	Teren. vaje Field work	Samost. delo Individ. work	ECTS
45	0	15	0	0	90	5

Nosilec predmeta / Lecturer:	Milan Ambrožič

Jeziki / Languages:	**Predavanja / Lectures:**	Slovenski/Slovene
	Vaje / Tutorial:	Slovenski/Slovene

Pogoji za vključitev v delo oz. za opravljanje študijskih obveznosti:

predznanje mehanike in matematične fizike.

Prerequisits:

Preknowledge of Mechanics and Mathematical physics.

Vsebina:

- Hidrostatika: osnovne enačbe.
- Plimovanje.
- Hidrodinamika: osnovne enačbe.
- Idealne tekočine: Eulerjeva enačba.
- Vrtinčnost.
- Bernoullijeve enačbe.
- Nestisljive tekočine.
- Dvodimenzionalni idealni tok.
- Teorija kril.
- Turbulenca.

Content (Syllabus outline):

- Hydrostatics: basic equations.
- Tide oscillations.
- Hydrodynamics: basic equations.
- Ideal liquids: Euler equations.
- Vorticity
- Bernoulli equations.
- Uncompressible liquids.
- Two-dimensional ideal stream.
- Theory of wings.
- Turbulence.

Temeljni literatura in viri / Readings:

1. L. D. Landau, E. M. Lifshitz, Fluid Mechanics (Pergamon Press, Oxford, 1989).
2. I. G. Currie, Fundamental mechanics of fluids (McGraw Hill, New York, 1993).
3. D. J. Acheson, Elementary fluid dynamics (Oxford university press, Oxford, 1990).

Cilji in kompetence:

Študenti usvojijo znanje s področja fizike tekočin.

Objectives and competences:

Students acquire knowledge on fluid physics.

Predvideni študijski rezultati:

Znanje in razumevanje:
Razumevanje osnovnih pojavov v tekočinah.

Prenesljive/ključne spretnosti in drugi atributi:
Razumevanje procesov v tehnologiji povezanih s fiziko tekočin.

Intended learning outcomes:

Knowledge and Understanding:
Understanding of basic processes in liquids.

Transferable/Key Skills and other attributes:
Understanding of technological processes related to fluids.

Metode poučevanja in učenja:	Learning and teaching methods:
Metodika obsega: teoretičen uvod v problematiko in analitično ali numerično reševanje posameznih problemov.	They are based on: theoretical introduction and analytic or numerical solving of specific problems.

Načini ocenjevanja:	Delež (v %) / Weight (in %)	Assessment:
2 pisna kolokvija ali pisni izpit ustni izpit	50 50	2 written tests or written or exam oral exam

Reference nosilca / Lecturer's references:

AMBROŽIČ, Milan, KOSMAČ, Tomaž. Optimization of the bend strength of flat-layered alumina-zirconia composites. *J. Am. Ceram. Soc.*, vol. 90, 2007, str. 1545-1550. [COBISS.SI-ID 20741415]

AMBROŽIČ, Milan, KRALJ, Samo, VIRGA, Epifanio G. Defect-enhanced nematic surface order reconstruction. *Phys. rev., E Stat. nonlinear soft matter phys. (Print)*, 2007, vol. 75, no. 3, str. 031708-1-031708-9. [COBISS.SI-ID 20736807]

CVETKO, Matej, AMBROŽIČ, Milan, KRALJ, Samo. Competition between local disordering and global ordering fields in nematic liquid crystals. *Beilstein journal of organic chemistry*, 2010, vol. 6, no. 2, str. 1-14. http://dx.doi.org/10.3762/bjoc.6.2, doi: 10.3762/bjoc.6.2. [COBISS.SI-ID 17410312]

ZIDANŠEK, Aleksander, AMBROŽIČ, Milan, MILFELNER, Maja, BLINC, Robert, LIOR, Noam. Solar orbital power : sustainability analysis. *Energy (Oxford)*. [Print ed.], 2011, vol. 36, no. 4, str. 1986-1995. [COBISS.SI-ID 24602919]

GORJAN, Lovro, AMBROŽIČ, Milan. Bend strength of alumina ceramics : a comparison of Weibull statistics with other statistics based on very large experimental data set. *J. Eur. Ceram. Soc.*. [Print ed.], 2012, vol. 32, no. 6, str. 1221-1227, doi: 10.1016/j.jeurceramsoc.2011.12.010. [COBISS.SI-ID 25578279]