Name of the module/subject Fluid Mechanics Profile of study general academic general academic General academic Course (computery, elective) Second-cycle studies For of study (full-time.part-time) Second-cycle studies Fluid Study Cycle of study Cycle	STUDY MODULE DESCRIPTION FORM						
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dr hab. inž. Piotr Krzyślak, prof. nadzw PP email: jotr.krzyslak @put.poznan.pl tel. +4861 665-2209 Machines and Transport ul. Piotrowo 3, 60-965 Poznań Prerequisites in terms of knowledge, skills and social competencies: 1 Knowledge 2 Skills Student can describe the basic physical phenomena, and perform calculations associated with them. 3 Social competencies Student is able to prioritize solving the tasks. Demonstrates self-reliance in solving problems, acquires and improves his/her knowledge and skills. Assumptions and objectives of the course: Acquaint students with the theoretical background and applications of fluid mechanics. Study outcomes and reference to the educational results for a field of study Knowledge: 1. The student has a basic knowledge of technical mechanics of fluids, ie, liquids and perfect gases and fluids, viscous Newtonian and non-Newtonian liquids, theory of thermal flow machines [K2A_W06] 2. The student has a basic knowledge of the methods of measurement of temperature and fluid streams [K2A_W13] Skills: 1. Student performs elementary technical calculations in the field of fluid mechanics on min. number of similarities and the reaction of liquid on the walls of the channel (convergent and divergent), channel of axial turbomachine [K2A_U17] 2. Student is ab	Resp	onsible for subi	ect / lecturer:				
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Social competencies:	3. Stud	dent is able to properly	use the equipment for measuring	the size of the main physical of	characteristics such as		
	Socia	al competencies	- [KZA_U19]				
1. Student is aware of their responsibility for their own work, - IK2A_K03I	1. Stu	dent is aware of their r	esponsibility for their own work - [K2A K031			
2. Student is aware of the validity of the behavior in a professional manner [K2A_K04]	2. Stud	dent is aware of the va	lidity of the behavior in a professio	onal manner [K2A_K04]			

Assessment methods of study outcomes

Lecture: Written exam

Laboratory exercises: Written test

Course description

Subject of fluid mechanics. The numbers used to describe similarities: the geometry of the fluid flow, the heat conductivity. Mach, Strouhal, Reynolds, Froude, Euler numbers. The reaction of fluid passing through the confusor, and diffuser, palisade rectilinear profiles. Rayleigh-Stokes equation.

Basic bibliography:

 Ciałkowski M., Mechanika Płynów. Skrypty Uczelniane. Wydawnictwo Politechniki Poznańskiej
 Ciałkowski M., Bartoszewicz J., Frąckowiak A., Grudziński M., Grzelczak M., Kołodziej J., Piątkowski R., Rybarczyk J., Wróblewska A., Mechanika płynów: zbiór zadań z rozwiązaniami, Wydawnictwo Politechniki Poznańskiej, Poznań 2008
 Prosnak W.J. Mechanika Płynów, t. I. PWN Warszawa 1971

Additional bibliography:

Result of average student's workload

Activity		Time (working hours)			
1. Lecture participation		15			
2. Consolidation of lecture content		3			
3. Preparation for exam		15			
4. Exam participation		20			
5. Preparation for exercises		10			
6. Participation in exercises		15			
7. Consolidation of exercise content		30			
8. Test preparation	5				
9. Test participation	1				
Student's workload					
Source of workload	hours	ECTS			
Total workload	70	2			
Contact hours	34	1			
Practical activities	0	0			