

(faculty stamp)

COURSE DESCRIPTION

Z1-PU7

WYDANIE N1

Strona 1 z 2

1. Course title: GAS PISTON ENGINES		2. Course code		
3. Validity of course description: from 2012/2013				
4. Level of studies: 2 nd cycle of higher education				
5. Mode of studies: intramural studies / extramural studies				
6. Field of study: POWER ENGINEERING			(FACULTY SYMBOL)	
7. Profile of studies: practical				
8. Programme: ENERGETYKA GAZOWA i ROZPROSZONA				
9. Semester: 2				
10. Faculty teaching the course: Instytut Techniki Ciepłej				
11. Course instructor: dr hab. inż. Ireneusz Szczygieł, prof. Pol. Śl.				
12. Course classification: speciality course				
13. Course status: compulsory /elective				
14. Language of instruction: English				
15. Pre-requisite qualifications: bases of machines construction, bases of machinery exploitation				
16. Course objectives: transmittion of knowledge and skills concerning modifications of engines feeding systems due to the gas fuel utilization				
17. Description of learning outcomes:				
Nr	Learning outcomes description	Method of assessment	Teaching methods	Learning outcomes reference code
1.	Describes and explains principles of operation and of construction of different gas fuel systems	test	lecture	K_W11, K_U_11, K_U15, K_U24
2.	Describes and explains elements of additional elements of systems	test	lecture	K_W11, K_U_11, K_U15, K_U24
3.	Selects the proper system for the specific engine model	test	lecture	K_W11, K_U_11, K_U15, K_U24
4.	Estimates the economic profits of gas feeding system	test	lecture	K_U_11, K_U13, K_U22
5.	Verifies experimentally functionality of used construction	pass laboratory	laboratory	K_U22
18. Teaching modes and hours				
Lecture 15/ BA /MA Seminar / Class / Project / Laboratory 15				
19. Syllabus description:				
lecture types of gas feeding systems in engines: construction, elements, parts, parts selection, ranges of utilization, auxiliary devices, standards, additional requirements laboratory measurements of gas fuel engines with comparison to the gasoline engine, characteristics, emissions, operational parameters				

20. Examination: no

21. Primary sources:

Majerczyk A., Taubert S.: **Układy zasilania gazem propan-butan**, WKŁ Warszawa 2003

22. Secondary sources:

Romaniszyn K., Alternatywne zasilanie samochodów benzyną oraz gazami LPG i CNG, WNT, Warszawa 2007, Molenda J., Gaz ziemny, WNT, Warszawa 1996

23. Total workload required to achieve learning outcomes

Lp.	Teaching mode :	Contact hours / Student workload hours
1	Lecture	15/10
2	Classes	/
3	Laboratory	15/20/
4	Project	/
5	BA/ MA Seminar	/
6	Other	/
	Total number of hours	30/30

24. Total hours: 60

25. Number of ECTS credits: 2

26. Number of ECTS credits allocated for contact hours: 1

27. Number of ECTS credits allocated for in-practice hours (laboratory classes, projects): 1

26. Comments:

Approved:

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(date, Instructor's signature)

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(date, the Director of the Faculty Unit signature)