Name of the modu		STUDY MODULE D	ESCRIPTION FORM	
	ile/subject of nuclea	r nower		^{ode} 010311371010315972
Field of study	or nuclea		Profile of study (general academic, practical)	Year /Semester
Electrical Engineering			(brak)	4/7
Elective path/specialty Electric Power Systems			Subject offered in: Polish	Course (compulsory, elective) obligatory
Cycle of study:			Form of study (full-time,part-time)	
First-cycle studies			full-time	
No. of hours				No. of credits
Lecture: 15	Classes	s: - Laboratory: -	Project/seminars:	2
Status of the course in the study program (Basic, major, other) (university-wide, from another fiel (brak) (brak)				·
	rak)			
Education areas a	ECTS distribution (number and %)			
technical sc	2 100%			
Technical sciences			2 100%	
Radosław Sz email: radosła tel. 61 665 20 Elektryczny ul. Piotrowo 3	aw.szczerbov) 30	wski@put.poznan.pl oznań		
	DA, 00-303 I	0211011		
Prerequisite	es in term	s of knowledge, skills an	d social competencies:	
Prerequisite		Basic knowledge of physics (bas mechanics, electrical engineerin	d social competencies: sic laws of physics, physical quan g, thermodynamics, heat transfer conversion, efficiency of convers). Knowledge of power
	ledge	Basic knowledge of physics (bas mechanics, electrical engineerin generation technologies: energy cycles.	sic laws of physics, physical quan g, thermodynamics, heat transfer). Knowledge of power ion and thermodynamic
1Know2Skills3Social	ledge	Basic knowledge of physics (bas mechanics, electrical engineerin generation technologies: energy cycles. Solving the balance of mass and	sic laws of physics, physical quan g, thermodynamics, heat transfer conversion, efficiency of convers). Knowledge of power ion and thermodynamic nal power plants
1Know2Skills3Socia comp	vledge Il petencies	Basic knowledge of physics (bas mechanics, electrical engineerin generation technologies: energy cycles. Solving the balance of mass and	sic laws of physics, physical quan g, thermodynamics, heat transfer conversion, efficiency of convers d energy in simple circuits of therr). Knowledge of power ion and thermodynamic nal power plants
1 Know 2 Skills 3 Socia comp Assumption Knowledge of get	ledge Il petencies is and obj eneral data a	Basic knowledge of physics (bas mechanics, electrical engineerin generation technologies: energy cycles. Solving the balance of mass and Awareness of the need to expan	sic laws of physics, physical quan g, thermodynamics, heat transfer conversion, efficiency of convers d energy in simple circuits of therr d their competence, readiness to uclear power in the global energy). Knowledge of power ion and thermodynamic nal power plants work together as a team. economy. Understanding the
1 Know 2 Skills 3 Socia comp Assumption Knowledge of ge characteristics o power reactors.	ledge	Basic knowledge of physics (bas mechanics, electrical engineerin generation technologies: energy cycles. Solving the balance of mass and Awareness of the need to expan ectives of the course: bout the role and importance of n	sic laws of physics, physical quan g, thermodynamics, heat transfer conversion, efficiency of convers d energy in simple circuits of therr d their competence, readiness to uclear power in the global energy tive waste management. Acquirin). Knowledge of power ion and thermodynamic nal power plants work together as a team. economy. Understanding the
1 Know 2 Skills 3 Socia comp Assumption Knowledge of ge characteristics o power reactors.	vledge	Basic knowledge of physics (bas mechanics, electrical engineerin generation technologies: energy cycles. Solving the balance of mass and Awareness of the need to expan ectives of the course: bout the role and importance of n cle in nuclear reactors and radioad	sic laws of physics, physical quan g, thermodynamics, heat transfer conversion, efficiency of convers d energy in simple circuits of therr d their competence, readiness to uclear power in the global energy tive waste management. Acquirin). Knowledge of power ion and thermodynamic nal power plants work together as a team. economy. Understanding the
1 Know 2 Skills 3 Socia comp Assumption Knowledge of ge characteristics or power reactors. Stute Stute Knowledge: 1. Understand not stand not sta	viedge	Basic knowledge of physics (bas mechanics, electrical engineerin generation technologies: energy cycles. Solving the balance of mass and Awareness of the need to expan ectives of the course: bout the role and importance of n cle in nuclear reactors and radioad	sic laws of physics, physical quan g, thermodynamics, heat transfer conversion, efficiency of convers d energy in simple circuits of therr d their competence, readiness to uclear power in the global energy tive waste management. Acquirir educational results for a). Knowledge of power ion and thermodynamic nal power plants work together as a team. economy. Understanding the g basic knowledge of nuclea field of study er plants, understands the
1 Know 2 Skills 3 Social comp Assumption Knowledge of get characteristics of power reactors. Stute Stute Knowledge of get characteristics of power reactors. Stute Knowledge: 1. Understand n impact of energy	viedge	Basic knowledge of physics (bas mechanics, electrical engineerin generation technologies: energy cycles. Solving the balance of mass and Awareness of the need to expar ectives of the course: bout the role and importance of n cle in nuclear reactors and radioad mes and reference to the	sic laws of physics, physical quan g, thermodynamics, heat transfer conversion, efficiency of convers d energy in simple circuits of therr d their competence, readiness to uclear power in the global energy tive waste management. Acquirir educational results for a). Knowledge of power ion and thermodynamic nal power plants work together as a team. economy. Understanding the g basic knowledge of nuclea field of study er plants, understands the t - [K_W03++]
1 Know 2 Skills 3 Socia comp Assumption Knowledge of ge characteristics or power reactors. Stute Stute 1. Understand n impact of energy 2. It has a basic	viedge	Basic knowledge of physics (bas mechanics, electrical engineerin generation technologies: energy cycles. Solving the balance of mass and Awareness of the need to expan ectives of the course: bout the role and importance of n cle in nuclear reactors and radioact mes and reference to the elopments in a nuclear reactor and processes taking place in nuclear	sic laws of physics, physical quan g, thermodynamics, heat transfer conversion, efficiency of convers d energy in simple circuits of therr d their competence, readiness to uclear power in the global energy tive waste management. Acquirir educational results for a). Knowledge of power ion and thermodynamic nal power plants work together as a team. economy. Understanding the g basic knowledge of nuclea field of study er plants, understands the t - [K_W03++]
1 Know 2 Skills 3 Socia comp Assumption Knowledge of ge characteristics or power reactors. Stut Stut Knowledge of energy Stut Impact of energy 2. It has a basic [K_W08++ K_W Skills: Skills:	viedge	Basic knowledge of physics (bas mechanics, electrical engineerin generation technologies: energy cycles. Solving the balance of mass and Awareness of the need to expan ectives of the course: bout the role and importance of n cle in nuclear reactors and radioact mes and reference to the elopments in a nuclear reactor and processes taking place in nuclear	sic laws of physics, physical quan g, thermodynamics, heat transfer conversion, efficiency of convers d energy in simple circuits of therr d their competence, readiness to uclear power in the global energy tive waste management. Acquirin educational results for a d process realized in nuclear pow power plants on the environmen tors and devices that make up the). Knowledge of power ion and thermodynamic nal power plants work together as a team. economy. Understanding the g basic knowledge of nuclea field of study er plants, understands the t - [K_W03++]
1 Know 2 Skills 3 Socia comp Assumption Knowledge of ge characteristics of power reactors. Stut Stut Knowledge of energy Stut 1. Understand n impact of energy 2. It has a basic [K_W08++ K_W Skills: 1. Able to asses	viedge	Basic knowledge of physics (bas mechanics, electrical engineerin generation technologies: energy cycles. Solving the balance of mass and Awareness of the need to expan ectives of the course: bout the role and importance of n cle in nuclear reactors and radioad mes and reference to the elopments in a nuclear reactor and processes taking place in nuclear of the construction of nuclear reactor	sic laws of physics, physical quan g, thermodynamics, heat transfer conversion, efficiency of convers d energy in simple circuits of therr d their competence, readiness to uclear power in the global energy tive waste management. Acquirin educational results for a d process realized in nuclear pow power plants on the environmen tors and devices that make up the ergy - [K_U05 +]). Knowledge of power ion and thermodynamic nal power plants work together as a team. economy. Understanding the g basic knowledge of nuclea field of study er plants, understands the t - [K_W03++]
1 Know 2 Skills 3 Socia comp Assumption Knowledge of ge characteristics of power reactors. Stut Stut Knowledge of energy Stut 1. Understand n impact of energy 2. It has a basic [K_W08++ K_W Skills: 1. Able to asses	viedge	Basic knowledge of physics (bas mechanics, electrical engineerin generation technologies: energy cycles. Solving the balance of mass and Awareness of the need to expar ectives of the course: bout the role and importance of n cle in nuclear reactors and radioad mes and reference to the elopments in a nuclear reactor and processes taking place in nuclear of the construction of nuclear reactor of the construction of nuclear energy cycles.	sic laws of physics, physical quan g, thermodynamics, heat transfer conversion, efficiency of convers d energy in simple circuits of therr d their competence, readiness to uclear power in the global energy tive waste management. Acquirin educational results for a d process realized in nuclear pow power plants on the environmen tors and devices that make up the ergy - [K_U05 +]). Knowledge of power ion and thermodynamic nal power plants work together as a team. economy. Understanding the g basic knowledge of nuclea field of study er plants, understands the t - [K_W03++]

-credit on the basis of a written work consisting of answers to questions concerning lectures - continuous evaluation in the classroom on the basis of ability to take the discussion on issues related to nuclear power

Course description

The state of development of nuclear power in the world. Generations of nuclear power reactors. Classification of nuclear power plants. General characteristics of the basic equipment and the principle of operation of a nuclear power plant. Fuel economy. Fuel cycle. Management of radioactive waste.

Basic bibliography:

1. Celiński Z., Strupczewski A., Podstawy energetyki jądrowej, WNT, 1984

2. Paska J., Elektrownie jądrowe, Oficyna Wydawnicza Politechniki Warszawskiej, 1990

3. Celiński Z., Energetyka jądrowa. PWN. 1991

- 4. Celiński Z., Energetyka jądrowa a społeczeństwo. PWN. 1992
- 5. Kubowski J.: Nowoczesne elektrownie jądrowe. Warszawa: WNT 2010
- 6. Kiełkiewicz M.: Jądrowe reaktory energetyczne. Warszawa: WNT 1978

Additional bibliography:

- 1. Ackermann G., Eksploatacja elektrowni jądrowych, WNT
- 2. Jezierski G., Energia jądrowa wczoraj i dziś, WNT, 2005
- 3. Kiełkiewicz M., Teoria reaktorów jądrowych. WNT. 1987

4. Hrynkiewicz A., Energia wyzwanie XXI wieku. Wydawnictwo Uniwersytetu Jagiellońskiego. 2002

Result of average student's workload

Activity	Time (working hours)	
1. participation in lectures		15
2. exam preparation	10	
3. presence on the exam	5	
4. the consultation of lectures	5	
Student's wo	rkload	
Source of workload	hours	ECTS
Total workload	35	2
Contact hours	25	1
Practical activities	0	0