Plan studiów - specjalność: Clean Coal Technologies

CODE: C- compulsory, E - elective, LS - language specialized e	Type	Total	Lecture	Classes	Laboratory	Project		Seminar			ECTS	Assessment
autumn semester			**Contact hours per semester**									
Environmental protection	C	60	30	15				15			**4**	Exam
Computer modeling of technological processes	C	30			30						**2**	
Advanced coal technologies	C	60	20	20		20					**5**	Exam
Process design and integration	C	45	20			25					**4**	
Preparation of a business plan	C, LS	60	15			45					**4**	
Electives x1** – Sport activities	E	30		30							**2**	
Electives x2**- Students Research Group	E	30			30***)	30***)					**2**	
Electives x3** - Intellectual Property Rights	E	30	10			20					**2**	
Electives - Block A*												
A1: Planning and forecasting in energy systems	E	45	15	10		20					**3**	
A2: Sustainable energy development	E	45	15			30					**3**	
A3: Heat and mass transfer processes in energy sector	E	45	15	30							**3**	
Electives – Block B*												
B1: Nuclear synergy with coal and chemical processing	E	45	15					30			**3**	
B2: Energy policy	E	45	15	30							**3**	
B3: Modern environmental analytics	E	45	15		30						**3**	

* Electives (block A or B, one to be selected)

** x1, x2 or x3 to be selected

***) lab or project, depending on Research Group

Meeting industry/non-academic/business representatives – invited lectures, seminars, consultations

Summer break   Industrial internship (minimum 2 months) (possible for 3-semester study) – 5 ECTS

KOD	Course	Type	Total	Lecture	Classess	Laboratory	Project	Seminar	inne ..	ECTS	Assessment
	spring semester			**Contact hours per semester**							
	Chemical reactors	C	45	20	25					**4**	exam
	Catalysis in fuel industry and air pollution control	C	60	30		30				**4**	
	Chemistry of coal	C	30	15		15				**2**	
	Biotechnology	C	30	15				15		**2**	
	Gasification	C	60	30			30			**5**	exam
	Carbon dioxide mitigation technologies	C	45	15				30		**4**	exam
	Electives - Block C *										
	C1: Renewable energy	E	45	15		30				**3**	
	C2: Fuel cells	E	45	15		30				**3**	
	C3: Low emission combustion	E	45	15	15	15				**3**	
	Electives - Block D *										
	D1:Ceramic materials for energy industry	E	45	15		30				**3**	
	D3: CFD modeling with ANSYS Fluent	E	45	15		30				**3**	
	D3:Radioactive elements in power industry and soil pollution control	E	45	15		20		10		**3**	

* Electives (block C or D, one to be elected)

Meeting industry/non-academic/business representatives – invited lectures, seminars, consultations

KOD	SEMESTR III Course	Type+C20	Total	Contact hours per semester								ECTS	Assessment
				Lecture	Classess	Laboratory	Project		Seminar				
	Diploma seminar	C	30						30			**10**	exam
	MSc thesis	C	0									**20**	