

CHART OF THE STUDY PROGRAM

Name of the education program (major) CIVIL ENGINEERING

Faculty name FACULTY OF CIVIL ENGINEERING AND ARCHITECTURE

Education program	resolution of the Faculty Board dated	24.04.2019 r.
	valid from the academic year	2019/2020
Level of study (first degree / second degree / uniform master study)		First degree
Profile of studies (general academic / practical)		General academic
Date and number of the resolution of the Senate adopting the major-related learning outcomes		25.04.2018 r., Resolution no. 220
Form of study (full-time studies/part-time studies)		Full-time studies
Assignment to the field or fields of science		Field of engineering and technical sciences
Indication of the discipline (science or art) or disciplines (in the case of few disciplines please indicate – or emphasize - the leading discipline to which a minimum of 50% of learning outcomes applies)		Discipline civil engineering and transport
Duration (in semesters)		7
Number of ECTS points		210
Professional title received by the graduate		Engineer
ISCED classification		0732
Relationship with the University's mission and its development strategy		Education in the field of Civil Engineering is in line with the mission of the Opole University of Technology and the university development strategy adopted by the Senate .
Learning objectives and employment opportunities and continuation of studies		Transfer of engineering and scientific knowledge of Civil Engineering field of study in the area of - execution of complex facilities for communal housing, and residential housing, - designing of complex objects and building elements, - advanced technologies and construction organizations, - managing teams and construction company - manufacturing, selection and application of modern building materials, - advanced methods and computer technology in engineering practice

	<p>preparation for work in:</p> <ul style="list-style-type: none"> - contracting firms , - construction supervision; concrete and building elements production plants, - building materials industry, - state and local government administration units related to construction and architecture, <p>preparation for starting second-degree studies</p>
Prerequisites - expected competences of the candidate (especially in the case of second-degree studies)	A candidate applying for admission to full-time first-degree studies in the field of Civil Engineering must have qualifications that decide on obtaining a secondary school-leaving certificate (qualification at level 4 PRK)
Recruitment rules (in accordance with the recruitment resolution)	<p>The basis for admission to full-time first-degree studies are the results of the matriculation examination (maturity). The criterion for admission to full-time first-degree studies is the value of the ranking index (R) calculated on the basis of the number of points obtained for the matriculation examination (secondary school), modern foreign language and two subjects selected from the group of subjects: chemistry, physics (with astronomy), computer science , Polish language, mathematics.</p> <p>Detailed CONDITIONS AND RECRUITMENT PROCESS FOR STUDIES AT OPOLE UNIVERSITY OF TECHNOLOGY are published on the website http://www.po.opole.pl in the Recruitment tab and in the reference book for candidates for a given academic year.</p>
Differences in relation to other programs with similarly defined goals and learning outcomes conducted at the Opole University of Technology	<p>Fields of study conducted at the Opole University of Technology, having similarly defined learning outcomes at the level of technical sciences in relation to the Civil Engineering field of study:</p> <ul style="list-style-type: none"> - Architecture and urban planning, - Automation control and robotics, - Electrical Engineering, - Industrial electronics, - Power Engineering - Informatics, - Safety engineering, - Chemical and process engineering, - Environmental engineering, - Logistics, - Mechanics and machine design, - Mechatronics, - Food technology and human nutrition, - Transport <p>objectives and learning outcomes of the graduates of the above mentioned fields of study differ fundamentally from the Civil engineering</p>

	at the level of major-related learning outcomes of graduates.	
Means of verification intended learning outcomes	Knowledge and skills - through written control of work progress, including material mastered as part of independent work, Social competences - through observation and assessment of attitudes during discussions and attitudes during the performance of tasks in practical classes, form and condition of obtaining a credit - based on measurable criteria for getting a pass.	
Summary indicators characterizing the study program,	the total number of ECTS points that a student must obtain in the courses requiring direct participation of academic teachers	103
	the total number of ECTS points that a student must obtain as part of the fundamental science to which the learning outcomes apply for a specific study program, the level and profile of study	58
	for the practical profile, the total number of ECTS points assigned to classes related to practical vocational preparation for the general academic profile, the total number of ECTS points assigned to courses related to scientific research in the field of science or art related to the field of study	146
	the number of ECTS points that a student must obtain as part of courses in the humanities or social sciences	6
	in the case of full-time or uniform master studies, the number of hours of physical education classes	60
	percentage share of the number of ECTS credits for the discipline of science (or art) "and" in the total number of ECTS credits - necessary to determine for each discipline, in the case of a study program associated with more than one discipline of science (or art)	100

Study program approved by the faculty student self-government body.

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Signature of the representative of the
faculty student self-government body

.....
date, signature, stamp of Dean

Table of major-related learning outcomes

study program (field of study): CIVIL ENGINEERING	
level of study: first degree	
educational profile: general academic	
symbol of major-related learning outcomes	Learning outcomes
Knowledge: the graduate	
K1_W01	has knowledge of selected branches of mathematics, physics and chemistry, which is the basis of subjects in the theory of construction and the properties of building materials, organization and management in construction
K1_W02	knows the principles of descriptive geometry and technical drawing with regard to recording and reading architectural, construction, geodetic and drawings and rendering them with the use of computer techniques CAD
K1_W03	has knowledge of the elements of geodesy applied in civil engineering, of geodetic work and basic surveying equipment.
K1_W04	has knowledge of engineering mechanics, strength of materials, modelling of materials and of the principles applied to shaping and optimization of structures
K1_W05	knows the principles of mechanics and analysis of rod structures in terms of statics and stability
K1_W06	knows the standards and guidelines for the design of buildings and their components and the selection of appropriate building materials
K1_W07	knows the standards and guidelines for the design of buildings and their components and the selection of appropriate building materials
K1_W08	knows the principles of foundation of building objects
K1_W09	knows the principles of analysis and construction of selected objects of general, industrial and transportation engineering
K1_W10	knows selected computer programs supporting the calculation and design of structures and organization of construction works together with theoretical foundations
K1_W11	knows the rules and technologies of industrial production of building materials and elements
K1_W12	knows the basics of building physics regarding heat and moisture flows in building objects
K1_W13	knows the most commonly used construction materials and has a basic knowledge of the technology of their production
K1_W14	has knowledge about creating procedures for quality management of construction works, knows norms and norms of work in construction as well as organization and principles of managing construction and investment process in construction
K1_W15	has basic knowledge of running a business in the construction industry
K1_W16	has knowledge about the impact of construction investments on the environment
K1_W17	knows the basic legal acts regarding the protection of industrial property and intellectual property, including the protection of innovative solutions in construction
K1_W18	knows and understands theories and terminology in the field of a foreign language that enables the use of a foreign language at the B2 level of the

	European System of Language Description
K1_W19	knows the rules of construction law and rules of ethics of the profession of a civil engineer, architect and urban planner
K1_W20	knows the social and cultural conditions of architecture and urban planning, the history of universal and Polish architecture, basic trends in the development of contemporary architecture
K1_W21	has knowledge of the technical equipment of construction facilities in internal installations and utilities infrastructure
K1_W22	knows basic issues in the field of health and safety regulations and ergonomics in construction
K1_W23	knows the basic principles of maintenance and operation of construction works
K1_W24	has basic knowledge needed to write and interpret simple algorithms of engineering calculations using block diagrams and selected programming language
K1_W25	has knowledge of quality management, can use standards for building materials and applicable legal provisions
K1_W26	has knowledge about environmental protection and the impact of construction materials on the environment
Skills: the graduate	
K1_U01	can obtain information from literature, databases and other sources, can integrate the obtained information, make their interpretation, as well as draw conclusions and formulate and justify opinions, including in the field of construction
K1_U02	efficiently communicates using various techniques in the professional environment of construction engineers and architects and in other environments
K1_U03	can prepare elaboration of problems in the field of basic construction issues in Polish and in a foreign language
K1_U04	can prepare and present a short presentation devoted to the results of the engineering task, including construction
K1_U05	has the ability to self-education, including to improve personal and professional competences
K1_U06	is able to use a foreign language at the B2 level of the European System of Language Description
K1_U07	can read architectural, construction and surveying drawings and can create building documentation in the environment of selected CAD programs
K1_U08	is able to perform simple laboratory experiments, including computer measurements and simulations, basic research of building materials, is able to analyze the results of research and draws appropriate conclusions
K1_U09	can classify construction objects, can correctly define calculation models of simple structures, can evaluate and make a statement of the existing loads
K1_U10	can perform static analysis of simple statically determinate and indeterminate bar structures
K1_U11	can correctly select tools (analytical or numerical) to solve simple problems of analysis and design of building objects and planning construction works
K1_U12	can use selected computer programs to support design decisions in construction, can critically evaluate the results of numerical analysis of simple building structures
K1_U13	can design selected elements and simple structures
K1_U14	can dimension the basic structural elements in general, industrial and

	transportation engineering
K1_U15	can design simple foundations for general construction buildings
K1_U16	is able to perform stability analysis and limit load capacity of simple bar systems in the area of critical and boundary state assessment of structures
K1_U17	can prepare energy balance, balance of water and gas demand and assess the amount of sanitary and rainwater discharged from a building facility
K1_U18	can create a basic cost estimate and schedule as well as a network of construction works connections
K1_U19	is able to assess hazards in the implementation of construction works and implement appropriate safety rules
K1_U20	can apply the provisions of the construction law
K1_U21	is able to select the known building materials due to their use and properties
K1_U22	knows how to organize work on a construction site in accordance with the principles of construction technology and organization
K1_U23	has the ability to conduct negotiations, independently plan and implement the lifelong learning process (with special regard to the characteristics of the design process and the implementation of construction facilities)
K1_U24	is able to estimate the age and architectural style of a building, associate appropriate material and structural solutions as well as typical operational problems
K1_U25	can write and interpret a simple algorithm of engineering calculations in the form of block diagram and selected programming language
K1_U26	is able to classify the aggressiveness of the environment of building objects and is able to correctly select the basic materials with particular emphasis on the impact of these environments
K1_U27	can use selected computer programs supporting concrete design
K1_U28	is able to select appropriate materials for thermal insulation of buildings and design it.
Social competences: the graduate	
K1_K01	understands the need for continuous training in the field of professional, personal and social competences
K1_K02	is aware of the importance and understands the non-technical aspects and effects of the construction engineer's activity, including its impact on the environment and the related responsibility for the decisions made
K1_K03	is responsible for his own work and is able to comply with the rules of working in a team and taking responsibility for the tasks he or she has carried out jointly
K1_K04	behaves in a professional manner, observes the rules of professional ethics, respects the diversity of views and cultures
K1_K05	thinks and acts in an entrepreneurial way
K1_K06	is aware of the social role of a technical university graduate, and especially understands the need to formulate and communicate to the public - including through mass media - information and opinions on building achievements and other aspects of the construction engineer's activity, makes efforts to provide such information and opinions in a generally understandable way
K1_K07	is ready to critically evaluate knowledge
K1_K08	is aware of the impact of building materials on the natural environment

Explanations

Description component code stand for:

- letter K – discriminator of major-related effects,
- number 1 – first degree studies,
- _sign (underscore),
- letters: W, U and K – designation of effects categories (W – knowledge, U – skills, K – social competences),
- 01, ... - effect number within a given category, written in the form of two digits (numbers 1-9 should be preceded by the number 0).

PLANY I PROGRAMY STUDIÓW
STUDY PLANS AND PROGRAMS

KIERUNEK STUDIÓW - *FIELD OF STUDY*****

- CIVIL ENGINEERING

- ***CIVIL ENGINEERING***

***Studia stacjonarne
pierwszego stopnia***

First Cycle Programme - Full-Time Studies

CHARAKTERYSTYKA OGÓLNA

kierunek studiów: CIVIL ENGINEERING

profil: OGÓLNOAKADEMICKI

nazwa wydziału: WYDZIAŁ BUDOWNICTWA I ARCHITEKTURY

plan studiów	uchwała Rady Wydziału z dnia	24.04.2019
	obowiązuje od roku akademickiego	2019/2020
forma studiów (stacjonarne / niestacjonarne)	stacjonarne	
poziom studiów (I stopnia / II stopnia)	I-go stopnia	
czas trwania (w sem.)	7	
tytuł zawodowy otrzymywany przez absolwenta	inżynier	
liczba punktów ECTS	210	

PLAN STUDIÓW – STUDY PLAN

POLITECHNIKA OPOLSKA WYDZIAŁ BUDOWNICTWA I ARCHITEKTURY	OPOLE UNIVERSITY OF TECHNOLOGY FACULTY OF CIVIL ENGINEERING
Kierunek studiów: CIVIL ENGINEERING	Field of study: CIVIL ENGINEERING
STUDIA STACJONARNE PIERWSZEGO STOPNIA – INŻYNIERSKIE	
FIRST CYCLE PROGRAMME - FULL-TIME STUDIES (Engineer's degree)	

SEMESTR: 1 (1st Semester)		Liczba godzin zajęć w semestrze; E – egzamin Working time (hours) a semester; E – Exam					ECTS	TYP
Nr	Przedmiot Subject unit – semester curricular	W (Lecture)	C (Practical classes)	L (Laboratory classes)	P (Project)	S (Seminar)		
1.1	Occupational Health and Safety Bezpieczeństwo i higiena pracy	15	–	–	–	–	1	O
1.2	Mathematics 1 Matematyka 1	45E	30	–	–	–	6	P
1.3	Chemistry of Building Materials Chemia materiałów budowlanych	30E	–	30	–	–	5	P
1.4	Geology Geologia	15E	15	–	–	–	3	P
1.5	Descriptive Geometry Geometria wykreślna	30E	30	–	–	–	5	K
1.6	Technical drawing Rysunek techniczny	15	30	–	–	–	3	K
1.7	Fundamentals of architecture and town planning Podstawy architektury i urbanistyki	30	15	–	–	–	4	K
Przedmioty obieralne – wymagana liczba p. ECTS w semestrze (Optional units – compulsory ECTS in a semester)							3	
1.8	Optional humanistic Course: Principles of artistic vision Przedmiot humanistyczny obieralny: Podstawy widerzenia artystycznego	30	–	–	–	–	(3)	Ob
	Optional humanistic Course: Sacrum in the art and architecture Przedmiot humanistyczny obieralny: Sacrum w sztuce i architekturze	30	–	–	–	–	(3)	Ob
Liczba godzin w semestrze (Number of hours in a semester)		210	150				30	
Razem godzin/ECTS w semestrze (Total hours/ECTS in a semester)		360						

SEMESTR: 2 (2nd Semester)		Liczba godzin zajęć w semestrze; E – egzamin Working time (hours) a semester; E – Exam					ECTS	TYP
Nr	Przedmiot Subject unit – semester curricular	W (Lecture)	C (Practical classes)	L (Laboratory classes)	P (Project)	S (Seminar)		
2.1	Physical Education Wychowanie fizyczne	–	30	–	–	–	0	O
2.2	Information Technology Technologia informacyjna	–	–	30	–	–	2	O

2.3	Protection of Intellectual Property	15	-	-	-	-	1	O
	Ochrona własności intelektualnej							
2.4	Mathematics 2	30E	30	-	-	-	5	P
	Matematyka 2							
2.5	Physics	30E	30	-	-	-	5	P
	Fizyka							
2.6	Engineering Mechanics 1	30E	-	-	30	-	5	P
	Mechanika teoretyczna 1							
2.7	Geodesy	15	-	30	-	-	4	K
	Geodezja							
2.8	Building Materials	30E	-	30	-	-	5	K
	Materiały budowlane							
Przedmioty obieralne – wymagana liczba p. ECTS w semestrze (Optional units – compulsory ECTS in a semester)							3	
2.9	Optional social Course: Innovation and ethic in the engineering profession	30	-	-	-	-	(3)	Ob
	Przedmiot społeczny obieralny: Innowacyjność i etyka zawodu inżyniera							
2.9	Optional social Course: The social aspects of spatial planning	30	-	-	-	-	(3)	Ob
	Przedmiot społeczny obieralny: Społeczne aspekty planowania przestrzennego							
Liczba godzin w semestrze (Number of hours in a semester)		180	210				30	
Razem godzin/ECTS w semestrze (Total hours/ECTS in a semester)		390						

SEMESTR: 3 (3 rd Semester)		Liczba godzin zajęć w semestrze; E – egzamin Working time (hours) a semester; E – Exam					ECTS	TYP
Nr	Przedmiot Subject unit – semester curricular	W (Lecture)	C (Practical classes)	L (Laboratory classes)	P (Project)	S (Seminar)		
3.1	Foreign Language 1	-	-	30	-	-	2	O
	Język obcy 1							
3.2	Mathematics 3	30E	15	-	-	-	4	P
	Matematyka 3							
3.3	Engineering Mechanics 2	30	-	-	15	-	4	P
	Mechanika teoretyczna 2							
3.4	Concrete technology	30E	-	30	-	-	4	K
	Technologia betonu							
3.5	Strength of Materials 1	30E	-	15	30	-	5	K
	Wytrzymałość materiałów 1							
3.6	Building Engineering 1	30E	-	-	30	-	5	K
	Budownictwo ogólne 1							
3.7	Soil Mechanics	30E	-	30	-	-	4	K
	Mechanika gruntów							
3.8	Building Installations	30	-	-	15	-	3	K
	Instalacje budowlane							
Przedmioty obieralne – wymagana liczba p. ECTS w semestrze (Optional units – compulsory ECTS in a semester)							3	
3.9	Optional Course 1: Environmental Protection In Civil Engineering	15	-	-	15	-	(3)	Ob
	Przedmiot obieralny 1: Ochrona środowiska w budownictwie							
3.9	Optional Course 1: Metrology in Civil Engineering	15	-	-	15	-	(3)	Ob
	Przedmiot obieralny 1: Metrologia w budownictwie							

Liczba godzin w semestrze (Number of hours in a semester)	225	225 (w tym 15 godz. obieralne)	34
Razem godzin/ECTS w semestrze (Total hours/ECTS in a semester)	450		

SEMESTR: 4 (4 th Semester)		Liczba godzin zajęć w semestrze; E – egzamin Working time (hours) a semester; E – Exam					ECTS	TYP
Nr	Przedmiot Subject unit – semester curricular	W (Lecture)	C (Practical classes)	L (Laboratory classes)	P (Project)	S (Seminar)		
4.1	Foreign Language 2 Język obcy 2	-	-	30	-	-	2	O
4.2	Strength of Materials 2 Wytrzymałość materiałów 2	30E	-	-	30	-	5	K
4.3	Structural Mechanics 1 Mechanika budowli 1	30E	-	-	30	-	5	K
4.4	Building Engineering 2 Budownictwo ogólne 2	30E	-	-	30	-	5	K
4.5	Mechanics of concrete Mechanika betonu	15	15	-	-	-	2	K
4.6	Building Physics Fizyka budowli	30	-	-	30	-	4	K
Przedmioty obieralne – wymagana liczba p. ECTS w semestrze (Optional units – compulsory ECTS in a semester)							3	
4.7	Optional Course 2: High Performance Concrete Przedmiot obieralny 2: Betony wysokowartościowe	15	-	-	-	15	(3)	Ob
	Optional Course 2: Precast concrete products Przedmiot obieralny 2: Prefabrykaty budowlane	15	-	-	-	15	(3)	Ob
Liczba godzin w semestrze (Number of hours in a semester)		150	180 (w tym 15 godz. obieralne)			26		
Razem godzin/ECTS w semestrze (Total hours/ECTS in a semester)		330						

SEMESTR: 5 (5 th Semester)		Liczba godzin zajęć w semestrze; E – egzamin Working time (hours) a semester; E – Exam					ECTS	TYP
Nr	Przedmiot Subject unit – semester curricular	W (Lecture)	C (Practical classes)	L (Laboratory classes)	P (Project)	S (Seminar)		
5.1	Foreign Language 3 Język obcy 3	-	-	30	-	-	2	O
5.2	Structural Mechanics 2 Mechanika budowli 2	30E	-	-	30	-	4	K
5.3	Foundation Engineering Fundamentowanie	30E	-	-	15	-	3	K
5.4	Concrete Structures 1 Konstrukcje betonowe 1	30E	-	-	30	-	4	K
5.5	Steel Structures 1 Konstrukcje metalowe 1	30E	-	-	30	-	4	K
5.6	Transportation Engineering Budownictwo komunikacyjne	30	-	-	30	-	3	K
5.7	Hydraulics and Hydrology Hydraulika i hydrologia	15	-	-	15	-	2	S
5.8	Building Works Technology Technologia robót budowlanych	30	-	-	15	-	2	S
5.9	Engineer Practice Praktyka kierunkowa	godziny niekontaktowe (un-contact hours)					6	S

Liczba godzin w semestrze (Number of hours in a semester)	195	–	30	165	–	30	
Razem godzin/ECTS w semestrze (Total hours/ECTS in a semester)	390						

SEMESTR: 6 (6 th Semester)		Liczba godzin zajęć w semestrze; E – egzamin Working time (hours) a semester; E – Exam					ECTS	TYP
Nr	Przedmiot Subject unit – semester curricular	W (Lecture)	C (Practical classes)	L (Laboratory classes)	P (Project)	S (Seminar)		
6.1	Foreign Language 4 Język obcy 4	(E)	–	30	–	–	2	O
6.2	Calculation Methods in Structural Mechanics Metody obliczeniowe w mechanice budowli	15	–	–	15	–	2	---
6.3	Concrete Structures 2 Konstrukcje betonowe 2	30E	–	15	30	–	5	K
6.4	Steel Structures 2 Konstrukcje metalowe 2	30E	–	15	30	–	5	K
6.5	Timber structures Konstrukcje drewniane	15	–	–	15	–	3	K
6.6	Organization of Building Production Organizacja produkcji budowlanej	30E	–	–	15	–	3	S
6.7	The Research Methodology Metodologia badań naukowych	15	–	–	–	–	1	Dyp
Przedmioty obieralne – wymagana liczba p. ECTS w semestrze (Optional units – compulsory ECTS in a semester)							9	
6.8	Optional Course 3: Foundations of Thermal Building Diagnostics Przedmiot obieralny 3: Podstawy diagnostyki cieplnej budynków	15	–	–	15	–	(3)	Ob
	Optional Course 3: Selected problems of building physics Przedmiot obieralny 3: Wybrane zagadnienia z fizyki budowli	15	–	–	15	–	(3)	Ob
6.9	Optional Course 5: Engineering structures Przedmiot obieralny 5: Konstrukcje inżynierskie	15	–	–	15	–	(3)	Ob
	Optional Course 5: Industrial building Przedmiot obieralny 5: Budownictwo przemysłowe	15	–	–	15	–	(3)	Ob

6.10	Optional Course 8 :Sustainable building Przedmiot obieralny 8: Budownictwo ekologiczne	15	-	-	15	-	(3)	Ob
	Optional Course 8: Bridge structure Przedmiot obieralny 8: Konstrukcje mostowe	15	-	-	15	-	(3)	Ob
	Optional Course 8: Computer aided design in building physics Przedmiot obieralny 8: Komputerowe wspomaganie projektowania w zakresie fizyki budowli	15	-	-	15	-	(3)	Ob
	Optional Course 8: Programing scientific computations Przedmiot obieralny 8: Programowanie obliczeń naukowo-technicznych	15	-	-	15	-	(3)	Ob
	Optional Course 8: Selected problems of building materials Przedmiot obieralny 8: Wybrane zagadnienia z materiałów budowlanych	15	-	-	15	-	(3)	Ob
	Optional Course 8: Selected problems of geotechnics Przedmiot obieralny 8: Wybrane zagadnienia z geotechniki	15	-	-	15	-	(3)	Ob
	Optional Course 8: Stochastic methods in civil engineering Przedmiot obieralny 8: Metody stochastyczne w inżynierii lądowej	15	-	-	15	-	(3)	Ob
	Liczba godzin w semestrze (Number of hours in a semester)	180	210 (w tym 45 godz. obieralne)				30	
	Razem godzin/ECTS w semestrze (Total hours/ECTS in a semester)	390						

SEMESTR: 7 (7 th Semester)		Liczba godzin zajęć w semestrze; E – egzamin Working time (hours) a semester; E – Exam					ECTS	TYP
Nr	Przedmiot Subject unit – semester curricular	W (Lecture)	C (Practical classes)	L (Laboratory classes)	P (Project)	S (Seminar)		
7.1	Building Law and Technical Requirements Prawo budowlane i warunki techniczne	15	-	-	-	-	1	O
7.2	Building Economics Ekonomika budownictwa	15E	-	-	15	-	2	S
7.3	Diploma Thesis Praca dyplomowa	godziny niekontaktowe (un-contact hours)					15	Dyp
Przedmioty obieralne – wymagana liczba p. ECTS w semestrze (Optional units – compulsory ECTS in a semester)							12	
7.4	Optional Course 4: Computer aided design - geometrical modeling Przedmiot obieralny 4: Komputerowe wspomaganie projektowania - modelowanie geometryczne	15	-	-	30	-	(3)	Ob
	Optional Course 4: Computer aided design - structural design Przedmiot obieralny 4: Komputerowe wspomaganie projektowania - projektowanie konstrukcji	15	-	-	30	-	(3)	Ob
7.5	Optional Course 6: Basic disign of roads and bridges Przedmiot obieralny 6: Podstawy projektowanie dróg i mostów	15	-	-	30	-	(3)	Ob
	Optional Course 6: Computer aided project of road structures Przedmiot obieralny 6: Komputerowe wspomaganie projektowania dróg	15	-	-	30	-	(3)	Ob

7.6	Optional Course 7: Cost estimate and technical specification	30E	-	-	15	-	(3)	Ob	
	Przedmiot obieralny 7: Kosztorysowanie i specyfikacje techniczne								
7.6	Optional Course 7: Directing of investment process	30E	-	-	15	-	(3)	Ob	
	Przedmiot obieralny 7: Kierowanie procesem inwestycyjnym								
7.7	Optional Course 9: Design of low-energy buildings	15	-	-	15	-	(2)	Ob	
	Przedmiot obieralny 9: Projektowanie budynków o obniżonym zapotrzebowaniu na energię								
	Optional Course 9: Composite structures with elements of CAD	15	-	-	15	-	(2)	Ob	
	Przedmiot obieralny 9: Konstrukcje zespolone z elementami CAD								
	Optional Course 9: Design of roads and highways	15	-	-	15	-	(2)	Ob	
	Przedmiot obieralny 9: Elementy projektowania dróg i autostrad								
	Optional Course 9: Geosynthetics in building constructions	15	-	-	15	-	(2)	Ob	
	Przedmiot obieralny 9: Geosyntetyki w budownictwie								
	Optional Course 9: Selected issues of concrete technology	15	-	-	15	-	(2)	Ob	
	Przedmiot obieralny 9: Wybrane zagadnienia z technologii betonu								
	Optional Course 9: Trenchless technologies - selected issues	15	-	-	15	-	(2)	Ob	
	Przedmiot obieralny 9: Technologie bezwykopowe - wybrane zagadnienia								
	7.8	Diploma seminar: Assesment of existing structures	-	-	-	-	15	(1)	Ob
		Seminarium dyplomowe: Ocena stanu technicznego istniejących budowli							
Diploma seminar: Selected aspects of building material engineering		-	-	-	-	15	(1)	Ob	
Seminarium dyplomowe: Wybrane zagadnienia z inżynierii materiałów budowlanych									
Diploma seminar: Selected aspects of material mechanics and structures		-	-	-	-	15	(1)	Ob	
Seminarium dyplomowe: Wybrane zagadnienia z mechaniki materiałów i konstrukcji									
Diploma seminar: Selected aspects of the construction of road and bridges		-	-	-	-	15	(1)	Ob	
Seminarium dyplomowe: Wybrane zagadnienia budowy dróg i mostów									
Diploma seminar: Selected problem of geotechnic and metrology		-	-	-	-	15	(1)	Ob	
Seminarium dyplomowe: Wybrane zagadnienia z geotechniki i metrologii									
Diploma seminar: Selected topics of structural engineering		-	-	-	-	15	(1)	Ob	
Seminarium dyplomowe: Wybrane zagadnienia konstrukcji budowlanych									
Diploma seminar: Special technologies - selected issues		-	-	-	-	15	(1)	Ob	
Seminarium dyplomowe: Technologie specjalne - wybrane zagadnienia									
Liczba godzin w semestrze (Number of hours in a semester)		105	120 (w tym 105 godz. obieralne)				30		
Razem godzin/ECTS w semestrze (Total hours/ECTS in a semester)		225							

PLAN STUDIÓW RAZEM (TOTAL STUDY PLAN)	ECTS
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Łącznie godzin kontaktowych/ECTS w planie studiów	2535	210
Total contact hours/ECTS in study plan		

STATYSTYKA PROGRAMU KSZTAŁCENIA			
Typ	Przedmioty - p. ECTS razem	wg planu	udział
O	Ogólne	13	6.19 %
Ob	Obieralne	33	15.71 %
P	Podstawowe	37	17.62 %
---	bez określonego typu	2	0.95 %
K	Kierunkowe	94	44.76 %
S	Specjalnościowe	15	7.14 %
Dyp	Związane z dyplomem	16	7.62 %
Łącznie:		210	100.00 %

Program kształcenia dostosowany do wydziałowych efektów uczenia się dla kierunku studiów CIVIL ENGINEERING (studia pierwszego stopnia)

Plan i program studiów:

- uchwalony przez Radę Wydziału Budownictwa i Architektury w dniu 24.04.2019
- zaopiniowany przez wydziałowy organ samorządu studenckiego.

Politechnika Opolska
Wydział Budownictwa i Architektury
Opole 2019 r.