



# Sustainable Building Engineering

## Course summary:



### Semester 1

- Mathematics
- Building chemistry
- Fundamentals of mechanics
- Descriptive geometry
- Engineering graphics + CAD
- Environmental Chemistry and Biology
- Humanistic and social elective I
- Basic of Architecture and Urban
- Landscape architecture and energy-saving
- Humanistic and social elective II
- Physical Education

### Semester 2

- Physics
- Basics of geology
- Basics of surveying
- Heat engineering in building
- Foreign language (German or Spanish)
- Architectural Design
- Strength of materials
- Building materials
- Field training of surveying

### Semester 3

- Architectural Design with BIM elements (part I)
- Concrete technology
- Soil mechanics and foundations I
- Structural Mechanics part 1
- Building Engineering
- Building Physics
- Construction Law
- Calculation Methods
- Masonry Structures
- Physical education

### Semester 4

- Fluid mechanics
- Sustainable building
- Architectural Design with BIM elements (part II)
- Technology of construction works
- Energy Management in Built Environment
- ES: Problems of health, hygiene and safety on building side
- Computer aided design with BIM
- Geotechnical practice

### Semester 5

- Architectural Design with BIM elements (part III)
- ES: Cost estimation / Building economics
- Timber Structures
- Concrete Structures I
- Steel Structures I
- Fundamentals of integrated building design
- Technical building systems (HVAC)
- Technical building systems (water, sewerage, gas)
- ES: Sustainable transport / Sustainable municipal management

### Semester 6

- External infrastructure
- Basics of municipal engineering
- ES: The basics of quality management / Integrated in building life cycle
- Industrial Structures
- Fundamentals of Road Construction
- Basics of Railroads
- Bridge Construction Basics
- Concrete structures II (with elements of BIM)
- Metal Structures II (with elements of BIM)
- Organization and planning of the building
- Prediploma practice

### Semester 7

- ES: Sustainable II / Engineering / Constructions / Transportation engineering
- Diploma seminar
- Preparation of the diploma thesis with elements of scientific research

## Programme description

During studies student acquires both, theoretical knowledge and practical skills (three programs of internship, including pre-graduate internship in a construction company) in sustainable building engineering with a reference to strength of materials, structural analysis, geomechanics, building technology, enterprise management, steel structures, concrete structures, timber structures, technical equipment of the building HVAC, water supply, sewage utilization, energy certification, architecture and city planning. The graduate will be capable of solving complex problems in civil engineering, with practical application of computer-aided design, including BIM (building information modelling) technology.

In Poland and EU, sustainable construction is a new social need. It is considered in the following aspects: ecological, economic and socio-cultural, taking into account knowledge in the field of construction, environmental engineering and architecture. The objective of the programme is to give all interested candidates the opportunity to gain valuable knowledge in the field of sustainable construction.



# Sustainable Building Engineering

<b>University</b>	Poznan University of Technology Poznan, POLAND
<b>Degree to be obtained</b>	Bachelor of Science, Eng.
<b>Programme website</b>	<a href="https://www.put.poznan.pl/en">https://www.put.poznan.pl/en</a>
<b>Contact</b>	International Relations Office Pl. M. Skłodowskiej-Curie 5 60-965 Poznan, Poland
<b>Phone</b>	+48 61 665 3544
<b>Fax</b>	+48 61 665 3956
<b>E-mail</b>	<a href="mailto:study@put.poznan.pl">study@put.poznan.pl</a>
<b>Language of instruction</b>	English
<b>ECTS points</b>	210
<b>Duration</b>	3.5 years (7 semesters)
<b>Programme begins</b>	end of September
<b>Programme ends</b>	end of February
<b>Deadline for application</b>	middle of July
<b>Education requirements</b>	English language – level B2 (Common European Framework), Secondary school certificate which entitles its holder to apply to higher education institutions. Full list of the required documents is available at: <a href="https://www.put.poznan.pl/en">https://www.put.poznan.pl/en</a>
<b>Mode of instruction</b>	Lectures, classes, laboratory classes, projects, internships