

Civil Engineering BSc Program in Győr

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Objective of BSc Program

The BSc Civil Engineering program aims to train civil engineers who can oversee engineering aspects (e.g., planning, design, construction, operation/maintenance, rehabilitation). Graduates can handle design challenges, basic developmental tasks, and intricate planning for civil engineering projects. They possess the ability to apply technical and scientific knowledge effectively. Moreover, graduate students are equipped to pursue advanced education opportunities, including MSc and Ph.D. programs.



Highway systems



Telecommunication Towers



Bridge Construction



Railways



Harbours



Airports



Pavement Construction



Buildings Construction

Educational process in Hungary

Bologna method from 2005

- | | |
|-----------------------------------|--------------|
| 1. Professional development (FSz) | 4 semester |
| 2. Bachelor of ... | |
| Science (BSc) | 6-8 semester |
| Arts (BA) | 6 semester |
| 1. Master of Science (MSc) | 3-4 semester |
| 2. Doctor of Philosophy (PhD) | 8 semester |

Civil Engineering education

BSc: 8 semesters

MSc: 3 semesters

PhD : 8 semesters



Civil Engineering Specialty

SZÉCHENYI ISTVÁN UNIVERSITY



Faculty Of Architecture, Civil Engineering And Transport Sciences, eekk.sze.hu



Departments



EDUCATION IN CIVIL ENGINEERING

BASIC REQUIREMENTS (EX. MATH, ECONOMICS, LAW ETC)

REQUIRED PROGRAM SUBJECTS → Special DEPARTMENTS

[Department of Transport Infrastructure and Water Resources Engineering – C405, kep.sze.hu](http://C405.kep.sze.hu)

Dr. Makó Emese, department head

Lazányi Andrea program coordinator

[Department of Structures and Geotechnical Engineering – D405, se.sze.hu](http://D405.se.sze.hu)

Dr. Szép János, vice dean for educational affairs

department head, Bsc program director

Nurullah Bektaş program mentor, bektas.nurullah@sze.hu



Student Support

Departments (department head, faculty),

Undergraduate director,

Faculty Mentor,

Students' Union (SU) – in Hungarian Hallgatói Önkormányzat (HÖK)

University: EHÖK Contact Details

Gerencsér Máté – TEYNJ – gerencsermate200091@gmail.com

<https://student.sze.hu/ehok-elerhetosegek>

Facebook: SZE Hallgatói Önkormányzat

https://www.facebook.com/szeehok/?locale=hu_HU

Student affairs

Neptun system



ÉPÍTŐMÉRNÖK – CIVIL Engineer

Design and construction of structurally or technologically more complex **structures** (e.g., industrial buildings, bridges, tunnels, waterworks, etc.), definition of construction methods, materials and quality standards, management and coordination of construction works, organization of maintenance and repair work.

Areas of Research Expertise among Professors:
https://se.sze.hu/en_GB/research-themes

Civil engineering specializations

- geoinformatics
- surveying
- building material testing
- photogrammetry and geomatics
- geotechnical engineering
- bridge design and construction
- road and railroad design and construction
- water resources engineering
- public works
- environmental engineering
- structural engineering

Civil Engineering Education in Győr

Past: 50-year KTMF – community college

Present: SZE BSc, MSc, PhD

BSc:

No Specialization : Civil Engineering

MSc: Infrastructure

Specialization: Transportation infrastructure
Geotechnical



Civil Engineering Program

8 semester - ~30 credit / semester, **240 credit**

Subjects

- ❖ – prerequisites (e.g. Mechanics of structures 2. – only after successful completion Mechanics of structures 1).
- ❖ Subject registration 1 semester, automatic
- ❖ From the second semester, the student takes it through Neptun

Semester 14 weeks – presentation, practice, midterms, homework etc.

Exam period : 6 weeks

6 weeks internship after 120 credits

- Cserpes Imre (D410, cserpesi@sze.hu) & Horváth Zsolt (C410, horzso@sze.hu)

Final Thesis work 8. semester, end of 7. semester selection of topic and advisor

- Transportation infrastructure topics: road, railroad, water?,
- Department of Transport Infrastructure and Water Resources Engineering – C405, kep.sze.hu
- Structural and geotechnical topics,
- Department of Structures and Geotechnical Engineering – D405, se.sze.hu

Curriculum

1.	2.	3.	4.	5.	6.	7.	8.	
Matematika 1 / Mathematics 1	Matematika 2 / Mathematics 2	Matematika 3 / Mathematics 3	Mérnöki technológiák / Engineering Technologies	Építésmenedzsment 1 / Construction management 1	Építésmenedzsment 2 / Construction management 2	Mérnöki üzemeltetés / Engineering Maintenance	Szakdolgozat / Thesis Consultation (Bachelor Programme)	
Tartószerkezetek mechanikája 1 / Mechanics of Structures 1	Tartószerkezetek mechanikája 2 / Mechanics of Structures 2	Tartószerkezetek analízise és méretezése / Analysis and Design of Structures	Hídszerkezetek 1 / Bridge Structures 1	Szerkezetépítési projekt 1 / Structural Engineering Project 1	Vasúti pályák 1 / Railway tracks 1	Acél-szerkezetek / Steel Structures		
Mérnöki számítási módszerek / Methods of Engineering Calculation	Geodézia / Geodesy	Tartószerkezetek 1 / Engineering Structures 1	Tartószerkezetek 2 / Engineering Structures 2	Tartószerkezetek 3 / Engineering Structures 3.	Faszervezetek / Timber Structures	Vasbeton szerkezetek / Reinforced Concrete Structures		
Ábrázoló geometria / Descriptive Geometry			Magasépítés 2 / Structural Engineering 2.		Közlekedéstechnika / Traffic engineering	Városi közlekedés / Urban transport planning		
Építőmérnöki alapozó fizika / Fundamental Physics for Civil Engineers	Települési ismeretek / Urban engineering	Magasépítés 1 / Structural Engineering 1.	Közlekedéstechnika 2 / Transport infrastructure 2	Közlekedéstechnika 3 / Transport infrastructure 3	Útpálya-szerkezetek és anyagaik / Road pavements and material	Tartószerkezeti BIM / BIM in Structural Engineering		Gazdasági/ humán
CAD alkalmazások 1 / CAD applications 1	CAD alkalmazások 2 / CAD applications 2	Közlekedéstechnika 1 / Transport infrastructure 1	Geotechnika 1 / Geotechnics 1	Közlekedéstechnika 2 / Transport infrastructure 2	Geotechnika 3 / Geotechnics 3	Geotechnics in Practice projekt 2 / Geotechnics a gyakorlatban		
Bevezetés az építőmérnökségbe / Introduction to Civil Engineering	Építőanyagok 1 / Construction Materials 1.	Térinformatika / GIS	Műszaki hidrológia / Hydrology	Geotechnika 2 / Geotechnics 2	Vízi közművek / Public Works	Hydraulic structures / vízepítési szerkezetek		
Vállalatgazdaságtan / Business Economics	Jogi ismeretek / Rudiments of Law	Építőanyagok 2 / Construction Materials 2.			Környezetvédelem / Environmental Protection	Hidraulika / Hydraulics		Gazdasági/ humán
	Gazdasági/ humán							

Subjects: https://se.sze.hu/en_GB/subjects

Course Prerequisite Information:

- <https://neptun.sze.hu/fuggoseg/index/szid/RUtJTI9CRUE=/szirid/RUtJTI9CRUE=/ttid/RUtJTI9CRUE=/idate/2023-02-06/nohtml/1/m/1333>

- <https://neptun.sze.hu/fuggoseg/index/szid/RUtJTI9CRUE=/szirid/U1RSVVR5OU5T/ttid/U1RSVVR5OU5T/idate/2023-02-06/nohtml/1/m/1333>



**SZÉCHENYI
EGYETEM**
UNIVERSITY OF GYŐR

1st semester:

- 8 classes
- 32 credits

Matematika 1 /
Mathematics 1

Tartószerkezetek
mechanikája 1 /
Mechanics of Structures
1

Mérnöki számítási
módszerek / Methods of
Engineering Calculation

Ábrázoló geometria/
Descriptive Geometry

Építőmérnöki alapozó
fizika/Fundamental
Physics for Civil
Engineers

CAD alkalmazások
1/CAD applications 1

Bevezetés az
építőmérnökségbe /
Introduction to Civil
Engineering

Vállalatgazdaságtan /
Business Economics



Acquired Knowledge

Some of the competencies that students are gain as given follows:

- The frequently used construction materials, their properties, and applications in civil engineering.
- Fundamental design principles and methodologies employed in the field of civil engineering.
- Key processes in construction technology, operational principles of equipment and machinery.
- Principles and techniques of in civil engineering sub-fields (e.g., geotechnical engineering, structural engineering, transportation engineering).
- Common measurement and survey procedures in civil engineering, along with associated tools and instruments.
- Professional methods for maintaining existing structures (such as bridges, pavement, and railways).
- Prominent standards governing civil engineering practices.
- Approaches to data collection, learning methodologies, and ethical considerations in civil engineering.

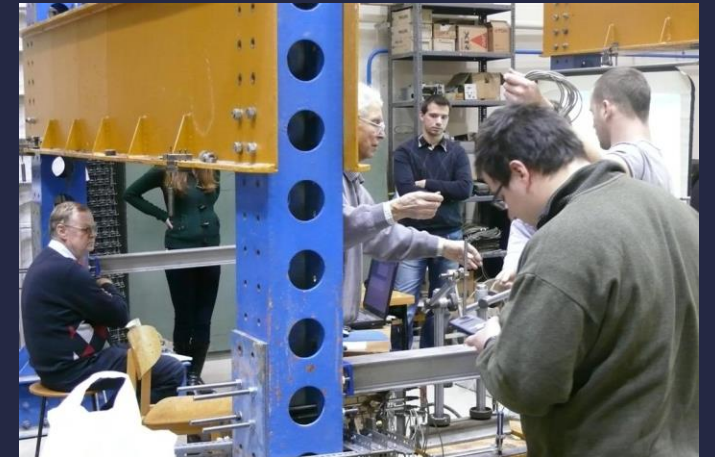


Acquired Skills

Students acquire various skills, including:

- Comprehending the behavior of built environment (e.g., bridges, coastal structures, tunnels, roads, rail, dams, buildings) and factors impacting engineering tasks.
- Implementing models for civil engineering design and calculation methods.
- Applying technical guidelines to the construction and operation of buildings.
- Communicating engineering concepts, such as through drawings.
- Excelling as a technical leader, civil engineering inspector, and participant in construction, accessibility, maintenance, operation, enterprise, and administrative roles across civil engineering domains.
- Performing civil engineering subtasks within urban systems.
- Independently solving basic design and development assignments within narrower civil engineering domains and collaborating on intricate tasks using civil engineering expertise.
- Utilizing and applying technical knowledge effectively.

Practice oriented education



Practice oriented education



Okanagan College in British Columbia Competition since 1983
Norbert Pozsonyi and Aliz Totivan of the Szechenyi Istvan University of Győr in Hungary
They won \$1,500 with a bridge that weighed 982 grams and held 443.58 kg in 2009.

Middle of September Pasta Paper bridge
Cserpes Imre organizer
Peter help him
Daniel from laboratory

Practice oriented education



Practice oriented education





Civil Engineering Process

- Planning
 - Design
 - Construction
 - Operation/Maintenance
 - Rehabilitation
- of the built environment



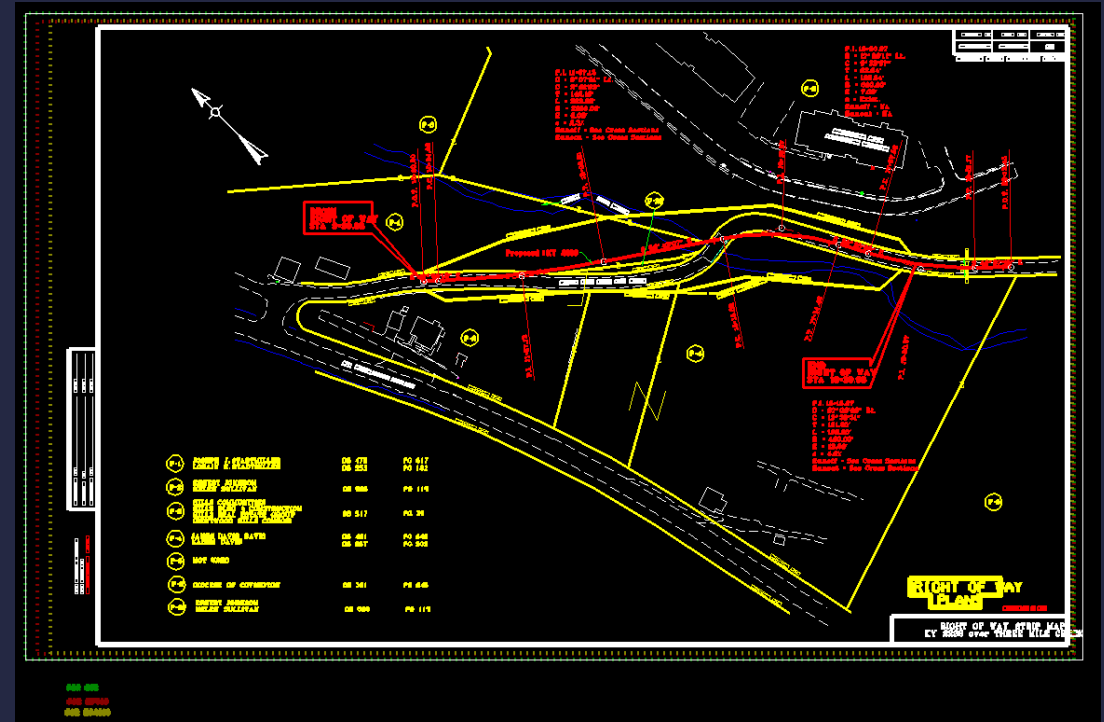
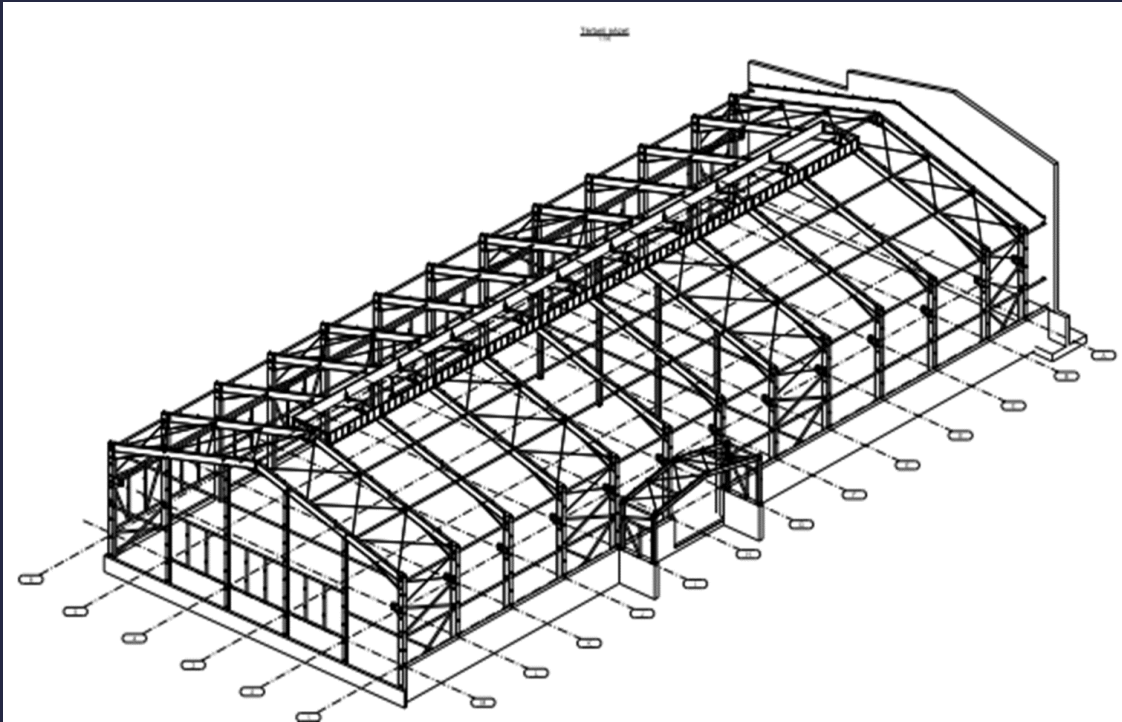
Planning

Find problem areas that need improvement and set the criteria for the design. Gather input from the public.



Design

Draw plans to show how the problem is going to be fixed



Construction

Follow the plans from design to build the solution to the problem



Operation/Maintenance

Fix small problems before they become big ones



Rehabilitation

To fix something back to original condition



Job opportunities

Investment

project preparation
project management

Regulation

Authorities
Legislation

Design

office design
expert work
lab research

Construction

on-site construction
technical inspection
technical
management
production

Maintenance

operation

A; B; C; D; E – Educational Buildings

L1-L4-Laboratory Buildings

K0-K4- Dormitory

IG-Administrative building

UT-Új Tudástér (Space of Knowledge)

K-Library

Cs- Hall

Mű- Műteremház
(Workshop building)

Me- Management Campus

Ik- Foreign Language
Center

J- Law Building

<https://uni.sze.hu/terkep>

