

## COURSE SYLLABUS AND COURSE REQUIREMENTS

### ACADEMIC YEAR 2023-2024 SEMESTER I.

<i>Course title</i>	<i>Technical Drawing 1.</i>
<i>Course Code</i>	<i>MSB276ANEP</i>
<i>Hours/Week: le/pr/lab</i>	<i>2/2/0</i>
<i>Credits</i>	<i>4</i>
<i>Degree Programme</i>	<i>Civil Engineering</i>
<i>Study Mode</i>	<i>full-time training</i>
<i>Requirements</i>	<i>mid-semester grade</i>
<i>Teaching Period</i>	<i>Practice: Tuesday, 09:30-11:00, Every week, Lecture: Tuesday, 11:15-12:45</i>
<i>Prerequisites</i>	<i>-</i>
<i>Department(s)</i>	<i>Institute of Smart Technology and Engineering</i>
<i>Course Director</i>	<i>Dr. Géza Cs.Nagy</i>
<i>Teaching Staff</i>	<i>Gyula Ferenc Vasvári</i>
<i>Hours/Week: le/pr/lab</i>	<i>2/2/0</i>

## COURSE DESCRIPTION

This lecture and practical based course aims to develop the skills of architecture students regarding the following topics, in frame of descriptive geometry: Application of imagery methods used in architecture and by related branches of building industry and civil engineering, internalizing of switching among these in frame of the descriptive geometry. Detection and application of relation of sizes regarding projected elements by use of geometrical constructions, imagery and intersection of solids and polyhedrons. The studied imagery methods of this course are bases of the conventional axonometric projections, central projection like central axial collineation, orthogonal projections like Monge-system and multi view orthographic projection as well as bases of the contour map system.

## SYLLABUS

### 1. GOALS AND OBJECTIVES

The course will focus on engineering drawing types, like Monge-system, axonometric views and the connection of these projection types. Students have to learn the rules of technical drawing, understand the spatial objects based on these drawings and be able to create technical drawings based on spatial objects. Furthermore, the course aims to hone students' analytical skills, enabling them to visualize and interpret three-dimensional structures from two-dimensional representations effortlessly. Practice tasks will further solidify these skills, ensuring that students are well-equipped to build constructions and components.

### 2. COURSE CONTENT

Students are required to complete 6 drawing tasks, 3 midterm tasks(homework) and 2 written tests. Students have to participate on classes. They learn the theoretical bases on lecture and create drawings on the practical lessons. The participation on the lectures is inevitable to pass the course. The drawings created on the practical lessons are part of the homework, so the students work on the practical lesson will be also scored. The course is based on lectures and practical lessons. The students have to solve tasks on the practice and on their own.

#### TOPICS

#### LECTURE

- 1. Introduction. Projection types.*
- 2. Monge-system, Image of spatial elements.*
- 3. Parallelism, perpendicularity in the Monge-system. Position of lines, polygons. Image of solids.*
- 4. Axonometric drawing. Types of Axonometry.*
- 5. Image plane transformation. New image plane in monge system.*
- 6. Transformation*
- 7. Cube, polygon based prisms, pyramid.*
- 8. Cylinder, cone, sphere*

## PRACTICE

9. *Solid's intersection without transformation. Intersection of solids*
1. *1<sup>st</sup> Drawing Task: Projections*
2. *2<sup>nd</sup> Drawing Task: Axonometric views*
3. *3<sup>rd</sup> Drawing Task: Transformation*
4. *4<sup>th</sup> Drawing Task: Flat line shapes*
5. *5<sup>th</sup> Drawing Task: Cylindrical and conic shapes*
6. *6<sup>th</sup> Drawing Task: Architectural drawing in Monge*
7. *1<sup>st</sup> Midterm Task: Standard projections and axonometric projections*
8. *2<sup>nd</sup> Midterm Task: Transformation*
9. *3<sup>rd</sup> Midterm Task: Intersection, Architectural drawing in Monge*
10. *1<sup>st</sup> Written Test: Geometry of space, Image of spatial elements, transformation*
11. *2<sup>nd</sup> Written Test: Intersections, Drawing in Monge.*

## DETAILED SYLLABUS AND COURSE SCHEDULE

ACADEMIC HOLIDAYS INCLUDED

### LECTURE

week	Topic	Compulsory reading; page number (from ... to ...)	Required tasks (assignments, tests, etc.)	Completion date, due date
1.	Introduction. Projection types. Planes in Monge-system. Piercing point and planes' intersection.	[1.] page 11- 32		
2.	Monge-system, Image of spatial elements.	[1.] page 33-55		
3.	Parallelism, perpendicularity in the Monge-system. Position of lines, polygons. Image of solids.	[1.] page 56- 79		
4.	Axonometric drawing. Types of Axonometry			
5.	Axonometric drawing. Types of Axonometry. <i>Consultation about 1<sup>st</sup> midterm task</i>		1 <sup>st</sup> midterm task	To be submitted at Lecture 7.
6.	Image plane transformation. New image plane in monge system.	[1.] page 112- 126		
7.	Transformation. <i>Consultation about 2nd midterm task</i>	[1.] page 127- 158	2 <sup>nd</sup> midterm task	To be submitted at Lecture 10.
8.	1st drawing test(written test)		1 <sup>st</sup> drawing test(written test)	
9.	Intersections of solids. Cube, polygon based prisms, pyramid			
10.	Intersections of solids. Cube, polygon based prisms, pyramid			
11.	<i>Consultation about 3<sup>rd</sup> midterm task</i>		3 <sup>rd</sup> midterm task	To be submitted at Lecture 13.
12.	Intersections of solids. Cylinder, cone, sphere			
13.	2 <sup>nd</sup> drawing test(written test)		2 <sup>nd</sup> drawing test(written test)	

## PRACTICE

week	Topic	Compulsory reading; page number (from ... to ...)	Required tasks (assignments, tests, etc.)	Completion date, due date
1.	Introduction. Projection types. Spatial element in Monge-system. Parallelism, perpendicularity in the Monge-system. Position of lines, polygons. Image of solids.	[2.] page 8- 13		
2.	Spatial element in Monge-system.	[2.] page 13- 18		
3.	Spatial elements, polygons and solids in Monge-system.	[2.] page 8-18	DrawingTask 1.	
4.	Spatial elements in Axonometry.	[2.] page 3- 8		
5.	Axonometric drawing		DrawingTask 2.	
6.	Transformational geometry			
7.	Transformation drawing		DrawingTask 3.	
8.	Flat line shapes	[2.] page 18- 20		
9.	Intersection of solids.		DrawingTask 4.	
10.	Intersection of flat line shapes			
11.	Cylindrical and conical shapes in Monge system		DrawingTask 5.	
12.	Intersection of cylindrical and conical shapes			
13.	Architectural drawing in Monge and Axonometry.		DrawingTask 6.	

## 3. ASSESSMENT AND EVALUATION

### ATTENDANCE

In accordance with the Code of Studies and Examinations of the University of Pécs, Article 45 (2) and Annex 9. (Article 3) a student may be refused a grade or qualification in the given full-time course if the number of class absences exceeds 30% of the contact hours stipulated in the course description.

Attending is required all classes, and will impact the grade (max. 10%). Unexcused absences will adversely affect the grade, and in case of absence from more than 30% of the total number of lesson will be grounds for failing the class. To be in class at the beginning time and stay until the scheduled end of the lesson is required, tardiness of more than 20 minutes will be counted as an absence. In the case of an illness or family emergency, the student must present a valid excuse, such as a doctor's note.

### Method for monitoring attendance

attendance sheet

### ASSESSMENT

#### Course resulting in mid-term grade (PTE TVSz 40§(3))

#### Mid-term assessments, performance evaluation and their ratio in the final grade

Type	Assessment	Ratio in the final grade
1. 1 <sup>st</sup> Drawing Task	5p	5%
2. 2 <sup>nd</sup> Drawing Task	5p	5%
3. 3 <sup>rd</sup> Drawing Task	5p	5%
4. 4 <sup>th</sup> Drawing Task	5p	5%
5. 5 <sup>th</sup> Drawing Task	5p	5%
6. 6 <sup>th</sup> Drawing Task	5p	5%
7. 1 <sup>st</sup> Midterm Task(Homework)	10p	10%
8. 2 <sup>nd</sup> Midterm Task(Homework)	10p	10%
9. 3 <sup>rd</sup> Midterm Task(Homework)	10p	10%
10. 1 <sup>st</sup> Written Test	20p	20%
11. 2 <sup>nd</sup> Written Test	20p	20%

Please note that attendance will adversely affect one's grade, both in direct grade reduction and in missing work in the development of a project.

#### Opportunity and procedure for re-takes (PTE TVSz 47§(4))

The specific regulations for improving grades and resitting tests must be read and applied according to the general Code of Studies and Examinations. E.g.: all tests and assessment tasks can be repeated/improved at least once every semester, and the tests and home assignments can be repeated/improved at least once in the first two weeks of the examination period.

If the student fulfills every requirement in the study period, it ends with a grade. The student who doesn't fulfill every requirement in the study period their signature will be denied.

**Grade calculation as a percentage**

*based on the aggregate performance according to the following table*

<b>Course grade</b>	<b>Performance in %</b>
excellent (5)	85 % ...
good (4)	70 % ... 85 %
satisfactory (3)	55 % ... 70 %
pass (2)	40 % ... 55 %
fail (1)	below 40 %

The lower limit given at each grade belongs to that grade.

## **4. SPECIFIED LITERATURE**

### **COMPULSORY READING AND AVAILABILITY**

- [1.] A.T. Chahly; Descriptive geometry
- [2.] Dávid Csonka, Gyula Vasvári; Mechanical design process

### **RECOMMENDED LITERATURE AND AVAILABILITY**

- [1.] Minor Clyde Hawk, Schaum's Outline of Theory and Problems of Descriptive Geometry
- [2.] Francis D. K. Ching, Architecture – Form, Space and Order
- [3.] Julia McMorrough, Drawing for Architects