

Koszalin University of Technology
Faculty of Civil Engineering, Environmental and Geodetic Sciences

Catalogue of Courses
Winter Semester
2025/2026

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Elective courses

There are 4 pairs of elective courses. You can choose only one from each pair (E1, E2, E3, E4)

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FACULTY:	Civil Engineering, Environmental and Geodetic Sciences
FIELD OF STUDY:	Civil Engineering, Environmental and Geodetic Sciences
ERASMUS COORDINATOR OF THE FACULTY:	Tomasz Dąbrowski
E-MAIL ADDRESS OF THE COORDINATOR:	tomasz.dabrowski@tu.koszalin.pl
COURSE TITLE:	CAD Basics 1
LECTURER'S NAME:	Tomasz Dąbrowski
E-MAIL ADDRESS OF THE LECTURER:	tomasz.dabrowski@tu.koszalin.pl
ECTS POINTS FOR THE COURSE:	2
COURSE CODE (USOS):	0511>0000E+CADB1
ACADEMIC YEAR:	2025/2026
SEMESTER: (W – winter, S – summer)	W
HOURS IN SEMESTER:	30
LEVEL OF THE COURSE: (1 st cycle, 2 nd cycle, 3 rd cycle)	1st cycle
TEACHING METHOD: (lecture, laboratory, group tutorials, seminar, other-what type?)	Computer laboratory
LANGUAGE OF INSTRUCTION:	<ul style="list-style-type: none"> • English full time scheme for classes with 5 and more international Erasmus+ students enrolled/accepted; • English 50% individually with the teacher + Polish 50% with Polish students or individual project work- scheme for classes with less than 5 international Erasmus+ students enrolled/accepted.
ASSESSMENT METHOD: (written exam, oral exam, class test, written reports, project work, presentation, continuous assessment, other – what type?)	Continuous assessment
COURSE CONTENT:	The course is an introduction to CAD. It shows Elements of the interface and communication with the program. Essential functions are discussed, including creating objects, hatching, and precise drawing. Then, functions for modifying created objects are presented. Layers and operations on them, properties and methods of adjusting objects, processes using blocks, and dimensioning of objects are discussed.
ADDITIONAL INFORMATION:	

FACULTY:	Civil Engineering, Environmental and Geodetic Sciences
FIELD OF STUDY:	Civil Engineering, Environmental and Geodetic Sciences
ERASMUS COORDINATOR OF THE FACULTY:	Tomasz Dąbrowski
E-MAIL ADDRESS OF THE COORDINATOR:	tomasz.dabrowski@tu.koszalin.pl
COURSE TITLE:	CAD Laboratory 2
LECTURER'S NAME:	Renata Pigoń
E-MAIL ADDRESS OF THE LECTURER:	renata.pigon@tu.koszalin.pl
ECTS POINTS FOR THE COURSE:	1
COURSE CODE (USOS):	0511>0000E+CADlab2
ACADEMIC YEAR:	2025/2026
SEMESTER: (W – winter, S – summer)	W
HOURS IN SEMESTER:	15
LEVEL OF THE COURSE: (1 st cycle, 2 nd cycle, 3 rd cycle)	1st cycle
TEACHING METHOD: (lecture, laboratory, group tutorials, seminar, other-what type?)	Laboratory
LANGUAGE OF INSTRUCTION:	<ul style="list-style-type: none"> • English full time scheme for classes with 5 and more international Erasmus+ students enrolled/accepted; • English 50% individually with the teacher + Polish 50% with Polish students or individual project work- scheme for classes with less than 5 international Erasmus+ students enrolled/accepted.
ASSESSMENT METHOD: (written exam, oral exam, class test, written reports, project work, presentation, continuous assessment, other – what type?)	Preparation of construction drawings in AutoCAD and continuous assessment of work in the classroom.
COURSE CONTENT:	<p>The following topics will be realized on the lessons in AutoCAD:</p> <ul style="list-style-type: none"> • Project 1 - technical drawing of auxiliary elements. • Project 2 - technical drawing of an exemplary geotechnical profile. • Project 3 - technical drawing of an exemplary car parking. • Project 4 - technical drawing of an exemplary wooden construction • Project 5 - technical drawing of an exemplary steel construction. • Project 6 - technical drawing of an exemplary reinforced concrete construction. • Advanced AutoCAD tools.
ADDITIONAL INFORMATION:	All the above will be conducted in accordance with the actual standards and regulations.

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ERASMUS COORDINATOR OF THE FACULTY:	Tomasz Dąbrowski
E-MAIL ADDRESS OF THE COORDINATOR:	tomasz.dabrowski@tu.koszalin.pl
COURSE TITLE:	Chemistry 2
LECTURER'S NAME:	Beata Janowska, PhD, DSc, Eng.
E-MAIL ADDRESS OF THE LECTURER:	beata.janowska@tu.koszalin.pl
ECTS POINTS FOR THE COURSE:	3
COURSE CODE (USOS):	0511>0000E+Chem2
ACADEMIC YEAR:	2025/2026
SEMESTER: (W – winter, S – summer)	W
HOURS IN SEMESTER:	30
LEVEL OF THE COURSE: (1 st cycle, 2 nd cycle, 3 rd cycle)	1st cycle
TEACHING METHOD: (lecture, laboratory, group tutorials, seminar, other-what type?)	Lectures
LANGUAGE OF INSTRUCTION:	<ul style="list-style-type: none"> • English full time scheme for classes with 5 and more international Erasmus+ students enrolled/accepted; • English 50% individually with the teacher + Polish 50% with Polish students or individual project work- scheme for classes with less than 5 international Erasmus+ students enrolled/accepted.
ASSESSMENT METHOD: (written exam, oral exam, class test, written reports, project work, presentation, continuous assessment, other – what type?)	Written exam / oral exam
COURSE CONTENT:	Organic chemistry. Preparation, structure, nomenclature, chemical and physical properties of: aliphatic hydrocarbons (alkanes, alkenes and alkynes); aromatic hydrocarbons; organohalogen compounds; alcohols, phenols, aldehydes and ketones; ethers; carboxylic acids and esters, heterocyclic compounds. Chemistry of plastics. Preparation, structure, chemical and physical properties of amino acids, proteins, nucleic acids and carbohydrate.
ADDITIONAL INFORMATION:	

FACULTY:	Civil Engineering, Environmental and Geodetic Sciences
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ERASMUS COORDINATOR OF THE FACULTY:	Tomasz Dąbrowski
E-MAIL ADDRESS OF THE COORDINATOR:	tomasz.dabrowski@tu.koszalin.pl
COURSE TITLE:	Chemistry Laboratory
LECTURER'S NAME:	Beata Janowska, PhD, DSc, Eng.
E-MAIL ADDRESS OF THE LECTURER:	beata.janowska@tu.koszalin.pl
ECTS POINTS FOR THE COURSE:	2
COURSE CODE (USOS):	0511>0000E+Chemlab
ACADEMIC YEAR:	2025/2026
SEMESTER: (W – winter, S – summer)	W
HOURS IN SEMESTER:	30
LEVEL OF THE COURSE: (1 st cycle, 2 nd cycle, 3 rd cycle)	1st cycle
TEACHING METHOD: (lecture, laboratory, group tutorials, seminar, other-what type?)	Laboratory
LANGUAGE OF INSTRUCTION:	<ul style="list-style-type: none"> • English full time scheme for classes with 5 and more international Erasmus+ students enrolled/accepted; • English 50% individually with the teacher + Polish 50% with Polish students or individual project work- scheme for classes with less than 5 international Erasmus+ students enrolled/accepted.
ASSESSMENT METHOD: (written exam, oral exam, class test, written reports, project work, presentation, continuous assessment, other – what type?)	Written reports
COURSE CONTENT:	Organizational activities, health and safety regulations. Basics of chemical calculations (percentages, molar concentrations, pH, calculations of chemical analyzes). Practical exercises: Characteristic reactions of cations and anions; basics of acid-base titrations; determination of water hardness; determination of the content of aggressive carbon dioxide; determination of the titre of the HCl solution; determination of the oxygen content; determination of chloride content using the Mohr method; Determination of phenol content; colorimetric determination of iron.
ADDITIONAL INFORMATION:	

FACULTY:	Civil Engineering, Environmental and Geodetic Sciences
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ERASMUS COORDINATOR OF THE FACULTY:	Tomasz Dąbrowski
E-MAIL ADDRESS OF THE COORDINATOR:	tomasz.dabrowski@tu.koszalin.pl
COURSE TITLE:	Design of Timber Structures
LECTURER'S NAME:	Robert Adamczyk
E-MAIL ADDRESS OF THE LECTURER:	robert.adamczyk@tu.koszalin.pl
ECTS POINTS FOR THE COURSE:	3
COURSE CODE (USOS):	0511>0000E+DTS
ACADEMIC YEAR:	2025/2026
SEMESTER: (W – winter, S – summer)	W
HOURS IN SEMESTER:	30+30
LEVEL OF THE COURSE: (1 st cycle, 2 nd cycle, 3 rd cycle)	1st cycle
TEACHING METHOD: (lecture, laboratory, group tutorials, seminar, other-what type?)	Lectures + Practical Classes
LANGUAGE OF INSTRUCTION:	<ul style="list-style-type: none"> • English full time scheme for classes with 5 and more international Erasmus+ students enrolled/accepted; • English 50% individually with the teacher + Polish 50% with Polish students or individual project work- scheme for classes with less than 5 international Erasmus+ students enrolled/accepted.
ASSESSMENT METHOD: (written exam, oral exam, class test, written reports, project work, presentation, continuous assessment, other – what type?)	Class test
COURSE CONTENT:	<p>Basic properties of wood. Checking the limit states with the method of partial factors. Structure load and serviceability classes. The design strength of the timber. ULS states: tension, compression, pressure, bending, shear, and complex state of stresses. Stability of elements: columns in compression and compression with bending, beams bent and bending with compression. SLS states: slips in joints, beam deflections, flexible joints. Uniform and complex beams with flexible connectors: principles of calculation and construction. Principles of forming joints and calculating metal fittings. The transverse load capacity of the dowel pins. Uniform and complex columns: internal and external ties, principles of calculation and construction. Purlins. Truss girders, additional stresses and deflections: principles of construction and calculations. Structures made of glued laminated timber: beams, arches and frames. Composite sections of timber and wood-based materials. Beams with thin webs. Bracing of timber structures: calculations and construction. Fire resistance of wooden structures. Impregnation of sawn timber.</p>
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ERASMUS COORDINATOR OF THE FACULTY:	Tomasz Dąbrowski
E-MAIL ADDRESS OF THE COORDINATOR:	tomasz.dabrowski@tu.koszalin.pl
COURSE TITLE:	Electronic Techniques of Measurement Laboratory
LECTURER'S NAME:	Krzysztof Deska, PhD
E-MAIL ADDRESS OF THE LECTURER:	krzysztof.deska@tu.koszalin.pl
ECTS POINTS FOR THE COURSE:	3
COURSE CODE (USOS):	0511>0000E+ETMlab
ACADEMIC YEAR:	2025/2026
SEMESTER: (W – winter, S – summer)	W
HOURS IN SEMESTER:	30
LEVEL OF THE COURSE: (1 st cycle, 2 nd cycle, 3 rd cycle)	1st cycle
TEACHING METHOD: (lecture, laboratory, group tutorials, seminar, other-what type?)	Laboratory
LANGUAGE OF INSTRUCTION:	<ul style="list-style-type: none"> • English full time scheme for classes with 5 and more international Erasmus+ students enrolled/accepted; • English 50% individually with the teacher + Polish 50% with Polish students or individual project work- scheme for classes with less than 5 international Erasmus+ students enrolled/accepted.
ASSESSMENT METHOD: (written exam, oral exam, class test, written reports, project work, presentation, continuous assessment, other – what type?)	test, written reports, project work
COURSE CONTENT:	<p>Geodetic instruments: levels, precision levels, theodolites, EDM, manual and robotic total stations, optical and laser plummets – practical part. Construction, principles of operation, software, settings and usage of instruments – practical part. Laboratory procedures using collimators for testing, calibrating and adjusting geodetic instruments.</p> <p>Field procedures for testing. Techniques of measurement using geodetic instruments.</p>
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ERASMUS COORDINATOR OF THE FACULTY:	Tomasz Dąbrowski
E-MAIL ADDRESS OF THE COORDINATOR:	tomasz.dabrowski@tu.koszalin.pl
COURSE TITLE:	Final Project Seminar 2
LECTURER'S NAME:	Jacek Domski
E-MAIL ADDRESS OF THE LECTURER:	jacek.domski@tu.koszalin.pl
ECTS POINTS FOR THE COURSE:	2
COURSE CODE (USOS):	0511>0000E+FPS2
ACADEMIC YEAR:	2025/2026
SEMESTER: (W – winter, S – summer)	W
HOURS IN SEMESTER:	15
LEVEL OF THE COURSE: (1 st cycle, 2 nd cycle, 3 rd cycle)	1st cycle
TEACHING METHOD: (lecture, laboratory, group tutorials, seminar, other-what type?)	Seminar
LANGUAGE OF INSTRUCTION:	<ul style="list-style-type: none"> • English full time scheme for classes with 5 and more international Erasmus+ students enrolled/accepted; • English 50% individually with the teacher + Polish 50% with Polish students or individual project work- scheme for classes with less than 5 international Erasmus+ students enrolled/accepted.
ASSESSMENT METHOD: (written exam, oral exam, class test, written reports, project work, presentation, continuous assessment, other – what type?)	Presentation
COURSE CONTENT:	Layout and structure of the diploma thesis. Methodology of preparing diploma theses. Literature selection, use and citation. The initial concept of the thesis. The subject and purpose of the study. Theses and the scope of the diploma thesis. The use of multimedia techniques in the presentation of the diploma thesis. Presentation of selected chapters of the diploma thesis. Evaluation of the adopted design solutions, comparative analyses, statistical evaluation of the results of experimental studies and numerical calculations. Analysis of calculation and construction errors. Evaluation of experimental research results.
ADDITIONAL INFORMATION:	Presentation of articles similar to the diploma thesis. Presentation of unusual, original design solutions (results of experimental tests/numerical modelling) of building structures.

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ERASMUS COORDINATOR OF THE FACULTY:	Tomasz Dąbrowski
E-MAIL ADDRESS OF THE COORDINATOR:	tomasz.dabrowski@tu.koszalin.pl
COURSE TITLE:	Fluid Mechanics
LECTURER'S NAME:	Prof. Robert Sidelko
E-MAIL ADDRESS OF THE LECTURER:	robert.sidelko@tu.koszalin.pl
ECTS POINTS FOR THE COURSE:	4
COURSE CODE (USOS):	0511>0000E+FM
ACADEMIC YEAR:	2025/2026
SEMESTER: (W – winter, S – summer)	W
HOURS IN SEMESTER:	30+15
LEVEL OF THE COURSE: (1 st cycle, 2 nd cycle, 3 rd cycle)	1st cycle
TEACHING METHOD: (lecture, laboratory, group tutorials, seminar, other-what type?)	Lectures + Practical Classes
LANGUAGE OF INSTRUCTION:	<ul style="list-style-type: none"> • English full time scheme for classes with 5 and more international Erasmus+ students enrolled/accepted; • English 50% individually with the teacher + Polish 50% with Polish students or individual project work- scheme for classes with less than 5 international Erasmus+ students enrolled/accepted.
ASSESSMENT METHOD: (written exam, oral exam, class test, written reports, project work, presentation, continuous assessment, other – what type?)	Class test
COURSE CONTENT:	Fluid mechanics covers: basic concepts and properties of fluids, hydrostatic pressure and the preparation of pressure diagrams, mathematical methods of fluid motion description, hydrodynamic concepts describing the movement of a fluid, fluid energy equation and a diagram of the energy of an ideal fluid, criteria defining the type of movement in a closed conduit, energy equation of a natural fluid and energy losses during flow, description of the linear loss coefficient for types of flow, methods of calculating fluid movement with the use of the energy description equation, methods of calculating the pipes and the operation of the lever, cooperation of tanks with networks and the methods of calculating flows, methods of calculating branch and ring networks as well as devices for pumping liquids, calculation of the outflow from a big and small flooded and non-flooded hole, fluid flow in overflows, open channels and channels, criteria of the flow type in open channels, flow of water in the ground and the calculation of ditches and wells outputs, laws of gas flow in a pipe and the calculation of pipes, methods of calculations in sanitary engineering, based on fluid mechanics.
ADDITIONAL INFORMATION:	

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ERASMUS COORDINATOR OF THE FACULTY:	Tomasz Dąbrowski
E-MAIL ADDRESS OF THE COORDINATOR:	tomasz.dabrowski@tu.koszalin.pl
COURSE TITLE:	Fluid Mechanics Laboratory
LECTURER'S NAME:	Prof. Robert Sidelko
E-MAIL ADDRESS OF THE LECTURER:	robert.sidelko@tu.koszalin.pl
ECTS POINTS FOR THE COURSE:	2
COURSE CODE (USOS):	0511>0000E+FMlab
ACADEMIC YEAR:	2025/2026
SEMESTER: (W – winter, S – summer)	W
HOURS IN SEMESTER:	30
LEVEL OF THE COURSE: (1 st cycle, 2 nd cycle, 3 rd cycle)	1st cycle
TEACHING METHOD: (lecture, laboratory, group tutorials, seminar, other-what type?)	Laboratory
LANGUAGE OF INSTRUCTION:	<ul style="list-style-type: none"> • English full time scheme for classes with 5 and more international Erasmus+ students enrolled/accepted; • English 50% individually with the teacher + Polish 50% with Polish students or individual project work- scheme for classes with less than 5 international Erasmus+ students enrolled/accepted.
ASSESSMENT METHOD: (written exam, oral exam, class test, written reports, project work, presentation, continuous assessment, other – what type?)	Written reports, class test
COURSE CONTENT:	<p>Viscosity measurement with Hoppler viscometer. Pressure measurement with liquid manometers and calibration of the spring pressure gauge.</p> <p>Determination of the gas flow rate with the measurement of local velocities</p> <p>Determination of the gas flow rate using the flange.</p> <p>Determination of local and linear loss coefficients. Serial and parallel cooperation of pumps.</p>
ADDITIONAL INFORMATION:	

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ERASMUS COORDINATOR OF THE FACULTY:	Tomasz Dąbrowski
E-MAIL ADDRESS OF THE COORDINATOR:	tomasz.dabrowski@tu.koszalin.pl
COURSE TITLE:	General Construction 2
LECTURER'S NAME:	Maciej Król, PhD
E-MAIL ADDRESS OF THE LECTURER:	maciej.krol@tu.koszalin.pl
ECTS POINTS FOR THE COURSE:	3
COURSE CODE (USOS):	0511>0000E+GC2
ACADEMIC YEAR:	2025/2026
SEMESTER: (W – winter, S – summer)	W
HOURS IN SEMESTER:	30
LEVEL OF THE COURSE: (1 st cycle, 2 nd cycle, 3 rd cycle)	1st cycle
TEACHING METHOD: (lecture, laboratory, group tutorials, seminar, other-what type?)	Lecture
LANGUAGE OF INSTRUCTION:	<ul style="list-style-type: none"> • English full time scheme for classes with 5 and more international Erasmus+ students enrolled/accepted; • English 50% individually with the teacher + Polish 50% with Polish students or individual project work- scheme for classes with less than 5 international Erasmus+ students enrolled/accepted.
ASSESSMENT METHOD: (written exam, oral exam, class test, written reports, project work, presentation, continuous assessment, other – what type?)	Written exam / oral exam
COURSE CONTENT:	<p>W1 impact on structures, snow and wind loads.</p> <p>W2 Basics of designing and calculating masonry structures. W3 Vaults and arches - principles of work and construction. W4 Roofing materials - types, applications and methods of execution. W5 Partition walls - types, possible applications, methods of execution.</p> <p>W6 Windows and doors - types and varieties, potential applications, ways of embedding in the wall.</p> <p>W7 Light walls and shielding systems - types, rules of application and execution.</p> <p>W8 Finishing walls and ceilings with plaster, plaster types, and plastering methods.</p> <p>W9 Floors and floor coverings on the ground and ceiling. Floor construction. Types of floors and methods of execution.</p> <p>W10 Paint coatings, types of paints and paint coatings used in construction. Painting techniques.</p>
ADDITIONAL INFORMATION:	<ol style="list-style-type: none"> 1. Fundamentals of Building Construction: Materials and Methods, Edward Allen, Joseph Iano, SBN13 (EAN): 9781119446194, editor: Wiley, 2. Handbook for Building Construction: Administration, Materials, Design, and Safety (2021) Christine Fiori, ISBN13 (EAN): 9781260456882, Clifford Schexnayder 3. Building Construction Illustrated, Ching, F, ISBN-10: 111958308X, WILEY; Edit 6 (2020)

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FIELD OF STUDY:	Civil Engineering, Environmental and Geodetic Sciences
ERASMUS COORDINATOR OF THE FACULTY:	Tomasz Dąbrowski
E-MAIL ADDRESS OF THE COORDINATOR:	tomasz.dabrowski@tu.koszalin.pl
COURSE TITLE:	Managing the Investment Process
LECTURER'S NAME:	Maciej Król, PhD
E-MAIL ADDRESS OF THE LECTURER:	maciej.krol@tu.koszalin.pl
ECTS POINTS FOR THE COURSE:	2
COURSE CODE (USOS):	0511>0000E+MIP
ACADEMIC YEAR:	2025/2026
SEMESTER: (W – winter, S – summer)	W
HOURS IN SEMESTER:	15+15
LEVEL OF THE COURSE: (1 st cycle, 2 nd cycle, 3 rd cycle)	1st cycle
TEACHING METHOD: (lecture, laboratory, group tutorials, seminar, other-what type?)	Lectures + Practical classes
LANGUAGE OF INSTRUCTION:	<ul style="list-style-type: none"> • English full time scheme for classes with 5 and more international Erasmus+ students enrolled/accepted; • English 50% individually with the teacher + Polish 50% with Polish students or individual project work- scheme for classes with less than 5 international Erasmus+ students enrolled/accepted.
ASSESSMENT METHOD: (written exam, oral exam, class test, written reports, project work, presentation, continuous assessment, other – what type?)	Presentation, written reports
COURSE CONTENT:	<p>W1 The investment process, forms and stages. Classification of building objects.</p> <p>W2 Participants in the investment process, Supervision and architectural and construction services.</p> <p>W3 Legal forms of construction companies. Functions of construction companies. Investment implementation systems.</p> <p>W4 Use of building structures</p> <p>W5 Construction investment process and environmental protection</p> <p>W6 Basic principles of awarding public contracts, procedures FIDIC</p> <p>C1 Transport algorithm</p> <p>C2 determination of the optimal assortment structure C3</p> <p>Dynamic programming items</p> <p>C4 Linear programming - graphic method C5</p> <p>Quotient programming</p> <p>C6 The problem of mixtures</p>
ADDITIONAL INFORMATION:	<p>Engineering Investment Process: Making Value Creation Repeatable 1st Edition, Publisher: ISTE Press - Elsevier; 1st edition, ISBN-10 : 1785481622</p> <p>Engineering Investment Process, Florian Ielpo, Chafic Merhy, Guillaume Simon, Publisher: Elsevier Science, ISBN 9780081011485</p>

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ERASMUS COORDINATOR OF THE FACULTY:	Tomasz Dąbrowski
E-MAIL ADDRESS OF THE COORDINATOR:	tomasz.dabrowski@tu.koszalin.pl
COURSE TITLE:	Mathematics 1
LECTURER'S NAME:	Dr hab. Volodymyr Sushch, Prof. PK
E-MAIL ADDRESS OF THE LECTURER:	volodymyr.sushch@tu.koszalin.pl
ECTS POINTS FOR THE COURSE:	5
COURSE CODE (USOS):	0511>0000E+Math1
ACADEMIC YEAR:	2025/2026
SEMESTER: (W – winter, S – summer)	W
HOURS IN SEMESTER:	45+30
LEVEL OF THE COURSE: (1 st cycle, 2 nd cycle, 3 rd cycle)	1st cycle
TEACHING METHOD: (lecture, laboratory, group tutorials, seminar, other-what type?)	Lectures + Practical classes
LANGUAGE OF INSTRUCTION:	<ul style="list-style-type: none"> • English full time scheme for classes with 5 and more international Erasmus+ students enrolled/accepted; • English 50% individually with the teacher + Polish 50% with Polish students or individual project work- scheme for classes with less than 5 international Erasmus+ students enrolled/accepted.
ASSESSMENT METHOD: (written exam, oral exam, class test, written reports, project work, presentation, continuous assessment, other – what type?)	Written exam
COURSE CONTENT:	<p>Linear algebra Complex numbers: the imaginary unit number, the Cartesian form or algebraic form of complex numbers, complex plane, absolute value, conjugation and distance, geometric interpretation of complex numbers, the operations on complex numbers, the polar form of complex numbers (the trigonometric form), the Euler formula, Moivre's formula, Powers and roots of complex numbers, and solutions of polynomial equations. Matrices: definition and notation, matrix operations, matrix multiplication, square matrices, determinant of a matrix, properties of determinants, matrix inverses, and the rank of a matrix. System of linear equations: matrix equation, solution set, solving linear systems (eliminations of variable - Gauss-Jordan elimination, Cramer's rule and other methods). Vectors in Euclidean space: vector operations, linear combination, linear independence, scalar product, vector product.</p> <p>Differential calculus Differentiation and the derivative of real-valued functions of a single real variable: definition via difference quotients, the derivative as a function, continuity and differentiability, and higher derivatives. Computing the derivative: derivatives of elementary functions, product rule, quotient rule, chain rule. Applications of the derivative: L'Hospital's rule, critical points, monotone increase and decrease, minimization and maximization, local minima and maxima (the first derivative test), using the second derivative, the concavity of the graph of a function.</p>
ADDITIONAL INFORMATION:	

FACULTY:	Civil Engineering, Environmental and Geodetic Sciences
FIELD OF STUDY:	Civil Engineering, Environmental and Geodetic Sciences
ERASMUS COORDINATOR OF THE FACULTY:	Tomasz Dąbrowski
E-MAIL ADDRESS OF THE COORDINATOR:	tomasz.dabrowski@tu.koszalin.pl
COURSE TITLE:	Mathematics 3
LECTURER'S NAME:	Dr hab. Volodymyr Sushch, Prof. PK
E-MAIL ADDRESS OF THE LECTURER:	volodymyr.sushch@tu.koszalin.pl
ECTS POINTS FOR THE COURSE:	3
COURSE CODE (USOS):	0511>0000E+Math3
ACADEMIC YEAR:	2025/2026
SEMESTER: (W – winter, S – summer)	W
HOURS IN SEMESTER:	30+30
LEVEL OF THE COURSE: (1 st cycle, 2 nd cycle, 3 rd cycle)	1st cycle
TEACHING METHOD: (lecture, laboratory, group tutorials, seminar, other-what type?)	Lectures + Practical classes
LANGUAGE OF INSTRUCTION:	<ul style="list-style-type: none"> • English full time scheme for classes with 5 and more international Erasmus+ students enrolled/accepted; • English 50% individually with the teacher + Polish 50% with Polish students or individual project work- scheme for classes with less than 5 international Erasmus+ students enrolled/accepted.
ASSESSMENT METHOD: (written exam, oral exam, class test, written reports, project work, presentation, continuous assessment, other – what type?)	Class test
COURSE CONTENT:	<p style="text-align: center;">Multiple integration</p> <p>The double integral: definition and properties, reduce the double integral to two integrals of one variable, interchange of the order of integration, normal domains on \mathbf{R}^2, methods of integration on normal domains, the change of variables in the double integral, transformation from Cartesian to polar coordinates, the formula of integration for the change of variables in polar coordinates, applications of the double integral.</p> <p>The triple integral: definition and properties, reduce the triple integral to three integrals of one variable, normal domains on \mathbf{R}^3, integration on normal domains in \mathbf{R}^3, cylindrical coordinates, the integration formula for the change of variables in cylindrical coordinates, spherical coordinates, the integration formula for the change of variables in spherical coordinates, applications of the triple integral.</p> <p>A line integral (a curve integral): the line integral of a scalar field, the line integral of a vector field, path independence, the contour integral, Green's theorem, applications.</p> <p style="text-align: center;">Series of real numbers</p> <p>Notation and basic properties of series: the partial sum of the series, examples (the geometric series, the harmonic series, the Dirichlet series), convergent series.</p> <p>Convergence tests: the divergence test (the n-th term test), the comparison test, the limit comparison test, the ratio test, the root test, the integral test.</p> <p>An alternating series: absolute convergence, conditional convergence (or semi-convergence), the alternating series test.</p> <p>Tests for series with positive and negative terms: the ratio test, the test of convergence in absolute value.</p>
ADDITIONAL INFORMATION:	

FACULTY:	Civil Engineering, Environmental and Geodetic Sciences
FIELD OF STUDY:	Civil Engineering, Environmental and Geodetic Sciences
ERASMUS COORDINATOR OF THE FACULTY:	Tomasz Dąbrowski
E-MAIL ADDRESS OF THE COORDINATOR:	tomasz.dabrowski@tu.koszalin.pl
COURSE TITLE:	Metal Structures 1
LECTURER'S NAME:	dr inż. Przemysław Krystosik
E-MAIL ADDRESS OF THE LECTURER:	przemyslaw.krystosik@tu.koszalin.pl
ECTS POINTS FOR THE COURSE:	4
COURSE CODE (USOS):	0511>0000E+MS1
ACADEMIC YEAR:	2025/2026
SEMESTER: (W – winter, S – summer)	W
HOURS IN SEMESTER:	45+30
LEVEL OF THE COURSE: (1 st cycle, 2 nd cycle, 3 rd cycle)	1st cycle
TEACHING METHOD: (lecture, laboratory, group tutorials, seminar, other-what type?)	Lectures + Practical classes
LANGUAGE OF INSTRUCTION:	<ul style="list-style-type: none"> • English full time scheme for classes with 5 and more international Erasmus+ students enrolled/accepted; • English 50% individually with the teacher + Polish 50% with Polish students or individual project work- scheme for classes with less than 5 international Erasmus+ students enrolled/accepted.
ASSESSMENT METHOD: (written exam, oral exam, class test, written reports, project work, presentation, continuous assessment, other – what type?)	Written exam + project work
COURSE CONTENT:	<p>L1 - Introductory information, steel grades, types and mechanical properties of construction steels (5h)</p> <p>L2 - Welded joints, rules of calculation and construction (10h)</p> <p>L3 - Connections with structural and high-strength bolts, rules of calculation and construction (10h)</p> <p>L4 – Hot-rolled beams, rules of dimensioning, the use of plastic properties of the material, load-bearing resistance of bending beams (10h)</p> <p>L5 - Uniform and build-up steel columns, principles of dimensioning and design (10h)</p> <p>E1 - Calculation and construction of joints for butt and fillet welds (10h)</p> <p>E2 - Calculation and construction of the bolt connections (6h)</p> <p>E3 - Calculation and construction of the high-strength bolt connections (the slip-resistance and the end-plate joints) (6h)</p> <p>E4 - Dimensioning of the hot-rolled beams with taking into account lateral-torsional buckling (4h)</p> <p>E5 - Dimensioning of the hot-rolled beams using the method of plastic equalization of moments (4h)</p>
ADDITIONAL INFORMATION:	Academic books and Eurocodes

FACULTY:	Civil Engineering, Environmental and Geodetic Sciences
FIELD OF STUDY:	Civil Engineering, Environmental and Geodetic Sciences
ERASMUS COORDINATOR OF THE FACULTY:	Tomasz Dąbrowski
E-MAIL ADDRESS OF THE COORDINATOR:	tomasz.dabrowski@tu.koszalin.pl
COURSE TITLE:	Reinforced Concrete Structures 1
LECTURER'S NAME:	Wiesława Głodkowska
E-MAIL ADDRESS OF THE LECTURER:	wieslawa.glodkowska@tu.koszalin.pl
ECTS POINTS FOR THE COURSE:	4
COURSE CODE (USOS):	0511>0000E+RCS
ACADEMIC YEAR:	2025/2026
SEMESTER: (W – winter, S – summer)	W
HOURS IN SEMESTER:	45+30
LEVEL OF THE COURSE: (1 st cycle, 2 nd cycle, 3 rd cycle)	1st cycle
TEACHING METHOD: (lecture, laboratory, group tutorials, seminar, other-what type?)	Lectures + Practical classes
LANGUAGE OF INSTRUCTION:	<ul style="list-style-type: none"> • English full time scheme for classes with 5 and more international Erasmus+ students enrolled/accepted; • English 50% individually with the teacher + Polish 50% with Polish students or individual project work- scheme for classes with less than 5 international Erasmus+ students enrolled/accepted.
ASSESSMENT METHOD: (written exam, oral exam, class test, written reports, project work, presentation, continuous assessment, other – what type?)	Written exam
COURSE CONTENT:	<p>The following topics will be taught:</p> <ul style="list-style-type: none"> • General information about concrete. • Characteristics of physical and mechanical properties and related conditions of concrete and steel, such as strength, elastic deformation, creep and shrinkage. • Fundamentals of designing reinforced concrete elements. • Ultimate Limit State and Serviceability Limit State for concrete reinforced elements. • Familiarization with bending, shearing, compression, stretching, cracking and deflection, punching shear and torsion issues. • The rules of making reinforcement in elements.
ADDITIONAL INFORMATION:	All the above will be conducted following the current standards and regulations.

FACULTY:	Civil Engineering, Environmental and Geodetic Sciences
FIELD OF STUDY:	Civil Engineering, Environmental and Geodetic Sciences
ERASMUS COORDINATOR OF THE FACULTY:	Tomasz Dąbrowski
E-MAIL ADDRESS OF THE COORDINATOR:	tomasz.dabrowski@tu.koszalin.pl
COURSE TITLE:	Sanitary Biology
LECTURER'S NAME:	Katarzyna Lewicka-Rataj, PhD
E-MAIL ADDRESS OF THE LECTURER:	katarzyna.lewicka@tu.koszalin.pl
ECTS POINTS FOR THE COURSE:	3
COURSE CODE (USOS):	0511>0000E+SB
ACADEMIC YEAR:	2025/2026
SEMESTER: (W – winter, S – summer)	W
HOURS IN SEMESTER:	30
LEVEL OF THE COURSE: (1 st cycle, 2 nd cycle, 3 rd cycle)	1st cycle
TEACHING METHOD: (lecture, laboratory, group tutorials, seminar, other-what type?)	Lecture
LANGUAGE OF INSTRUCTION:	<ul style="list-style-type: none"> • English full time scheme for classes with 5 and more international Erasmus+ students enrolled/accepted; • English 50% individually with the teacher + Polish 50% with Polish students or individual project work- scheme for classes with less than 5 international Erasmus+ students enrolled/accepted.
ASSESSMENT METHOD: (written exam, oral exam, class test, written reports, project work, presentation, continuous assessment, other – what type?)	Written class test
COURSE CONTENT:	<p>Diversity and history of microorganisms. Cell structure and organization of bacteria, fungi and protista. Viruses – viral structure, replication cycles, states of viral infections. Microbial metabolism: enzymes, catabolic and anabolic reaction, aerobic respiration, fermentation and anaerobic respiration, type of metabolism: chemoorganotrophy =heterotrophy, chemolithotrophy, phototrophy. The share of microorganisms in the circulation of matter and energy flow - biogeochemical cycles of carbon, nitrogen, and phosphorus in water ecosystems.</p> <p>Ecological groups of aquatic organisms and their importance in maintaining homeostasis of reservoirs. Eutrophication of lakes, mechanisms, "vicious circle", toxic cyanobacterial blooms and the related threats to human life and health. Organisms inhabiting industrial water installations and water treatment devices. The role of microorganisms in forming biofilms on abiotic surfaces of the water distribution system and air conditioning equipment.</p> <p>Waterborne diseases and pathological agents in soil and air. Biological processes in wastewater treatment - the activated sludge method.</p>
ADDITIONAL INFORMATION:	<p>References:</p> <p>1.Nicklin J., Graeme-Cook K., Paget T., Killington R., 2001. Instant Notes in Microbiology. BIOS Scientific Publishers Limited, Oxford. 2.Hogg S., 2005. Essential microbiology. John Wiley & Sons, Ltd, England.</p> <p>3.Salyers A.A., Whitt D. D., 2001. Microbiology. Diversity, Disease, and The Environment. Fitzgerald Science Press, Inc. of Bethesda, MD, USA.</p>

FACULTY:	Civil Engineering, Environmental and Geodetic Sciences
FIELD OF STUDY:	Civil Engineering, Environmental and Geodetic Sciences
ERASMUS COORDINATOR OF THE FACULTY:	Tomasz Dąbrowski
E-MAIL ADDRESS OF THE COORDINATOR:	tomasz.dabrowski@tu.koszalin.pl
COURSE TITLE:	Sanitary Biology Laboratory
LECTURER'S NAME:	Katarzyna Lewicka-Rataj, PhD
E-MAIL ADDRESS OF THE LECTURER:	katarzyna.lewicka@tu.koszalin.pl
ECTS POINTS FOR THE COURSE:	2
COURSE CODE (USOS):	0511>0000E+SBlab
ACADEMIC YEAR:	2025/2026
SEMESTER: (W – winter, S – summer)	W
HOURS IN SEMESTER:	30
LEVEL OF THE COURSE: (1 st cycle, 2 nd cycle, 3 rd cycle)	1st cycle
TEACHING METHOD: (lecture, laboratory, group tutorials, seminar, other-what type?)	Laboratory
LANGUAGE OF INSTRUCTION:	<ul style="list-style-type: none"> • English full time scheme for classes with 5 and more international Erasmus+ students enrolled/accepted; • English 50% individually with the teacher + Polish 50% with Polish students or individual project work- scheme for classes with less than 5 international Erasmus+ students enrolled/accepted.
ASSESSMENT METHOD: (written exam, oral exam, class test, written reports, project work, presentation, continuous assessment, other – what type?)	Written reports and class test
COURSE CONTENT:	<p>Sterilization and disinfection methods. Microbiological media. Macroscopic evaluation of the morphology of bacterial colonies on the culture medium. Procedures for preparing microscopic slides; simple and complex staining methods; microscopic observation using a light microscope. Determination of physiological and biochemical properties of bacteria by using media and API kit for identification.</p> <p>Microbiological analysis of water and air samples; estimation of a number of colony forming units (CFU) of bacteria and fungi; estimation of the most probable number (MPN) of bacteria and estimation of cell number by membrane filtration in the water samples. Assessment of the sanitary condition of the air in the tested rooms. Test methods for selected indicators of faecal contamination: coliform bacteria and faecal streptococci used to monitor tap water. Activated sludge biocenosis - microscopic analysis. Microscopic analysis of plant cell structure. Phytoplankton, zooplankton, zoobenthos - structure and importance for the functioning of a water reservoir, selected indicator species. Sanitary threats caused by parasites – the way of infection.</p>
ADDITIONAL INFORMATION:	<p>References:</p> <ol style="list-style-type: none"> 1. Kołzan B., Adamiak W., Rybak J., 2011. Sanitary Biology. Environmental Quality Management. Łódź: PRINTPAP. 2. Kołzan B., Adamiak W., Grabas K., Pawełczyk A., 2006. Introduction to environmental microbiology. Publishing House of the Wrocław University of Technology, Wrocław.

FACULTY:	Civil Engineering, Environmental and Geodetic Sciences
FIELD OF STUDY:	Civil Engineering, Environmental and Geodetic Sciences
ERASMUS COORDINATOR OF THE FACULTY:	Tomasz Dąbrowski
E-MAIL ADDRESS OF THE COORDINATOR:	tomasz.dabrowski@tu.koszalin.pl
COURSE TITLE:	Soil Mechanics and Foundation Engineering 1
LECTURER'S NAME:	Jarosław Filipiak
E-MAIL ADDRESS OF THE LECTURER:	jaroslaw.filipiak@tu.koszalin.pl
ECTS POINTS FOR THE COURSE:	2
COURSE CODE (USOS):	0511>0000E+SMFE1
ACADEMIC YEAR:	2025/2026
SEMESTER: (W – winter, S – summer)	W
HOURS IN SEMESTER:	30
LEVEL OF THE COURSE: (1 st cycle, 2 nd cycle, 3 rd cycle)	1st cycle
TEACHING METHOD: (lecture, laboratory, group tutorials, seminar, other-what type?)	Lectures
LANGUAGE OF INSTRUCTION:	<ul style="list-style-type: none"> • English full time scheme for classes with 5 and more international Erasmus+ students enrolled/accepted; • English 50% individually with the teacher + Polish 50% with Polish students or individual project work- scheme for classes with less than 5 international Erasmus+ students enrolled/accepted.
ASSESSMENT METHOD: (written exam, oral exam, class test, written reports, project work, presentation, continuous assessment, other – what type?)	Written exam
COURSE CONTENT:	<ol style="list-style-type: none"> 1. Physical features and soil conditions. 2. Water in the ground and its influence on physical properties and soil conditions. 3. Problems related to the flow of water in the ground. 4. Protection of structures against water. 5. Strength and deformability of soils. 6. Ground pressure problems (retaining walls, excavation protection). 7. Foundations.
ADDITIONAL INFORMATION:	

FACULTY:	Civil Engineering, Environmental and Geodetic Sciences
FIELD OF STUDY:	Civil Engineering, Environmental and Geodetic Sciences
ERASMUS COORDINATOR OF THE FACULTY:	Tomasz Dąbrowski
E-MAIL ADDRESS OF THE COORDINATOR:	tomasz.dabrowski@tu.koszalin.pl
COURSE TITLE:	Soil Mechanics and Foundation Engineering Laboratory
LECTURER'S NAME:	Jarosław Filipiak
E-MAIL ADDRESS OF THE LECTURER:	jaroslaw.filipiak@tu.koszalin.pl
ECTS POINTS FOR THE COURSE:	2
COURSE CODE (USOS):	0511>0000E+SMFElab
ACADEMIC YEAR:	2025/2026
SEMESTER: (W – winter, S – summer)	W
HOURS IN SEMESTER:	30
LEVEL OF THE COURSE: (1 st cycle, 2 nd cycle, 3 rd cycle)	1st cycle
TEACHING METHOD: (lecture, laboratory, group tutorials, seminar, other-what type?)	Laboratory
LANGUAGE OF INSTRUCTION:	<ul style="list-style-type: none"> • English full time scheme for classes with 5 and more international Erasmus+ students enrolled/accepted; • English 50% individually with the teacher + Polish 50% with Polish students or individual project work- scheme for classes with less than 5 international Erasmus+ students enrolled/accepted.
ASSESSMENT METHOD: (written exam, oral exam, class test, written reports, project work, presentation, continuous assessment, other – what type?)	Written reports
COURSE CONTENT:	<ol style="list-style-type: none"> 1. Macroscopic examination and determination of the fundamental physical properties of the soil. 2. Determination of the oedometric modulus of soil compressibility. 3. Determination of soil consistency boundaries. 4. Determination of soil filtration parameters. 5. Determination of optimum soil moisture by the Proctor method. 6. Determination of soil shear strength. 7. Calculating dependencies between soil physical properties – tasks. 8. Determination of stress distribution in soil due to external load – tasks. 9. Subsidence of the ground under direct foundations – tasks.
ADDITIONAL INFORMATION:	

FACULTY:	Civil Engineering, Environmental and Geodetic Sciences
FIELD OF STUDY:	Civil Engineering, Environmental and Geodetic Sciences
ERASMUS COORDINATOR OF THE FACULTY:	Tomasz Dąbrowski
E-MAIL ADDRESS OF THE COORDINATOR:	tomasz.dabrowski@tu.koszalin.pl
COURSE TITLE:	Water Treatment Laboratory
LECTURER'S NAME:	Renata Świderska-Dąbrowska
E-MAIL ADDRESS OF THE LECTURER:	renata.swiderska-dabrowska@tu.koszalin.pl
ECTS POINTS FOR THE COURSE:	1
COURSE CODE (USOS):	0511>0000E+Wtlab
ACADEMIC YEAR:	2025/2026
SEMESTER: (W – winter, S – summer)	W
HOURS IN SEMESTER:	15
LEVEL OF THE COURSE: (1 st cycle, 2 nd cycle, 3 rd cycle)	1st cycle
TEACHING METHOD: (lecture, laboratory, group tutorials, seminar, other-what type?)	laboratory
LANGUAGE OF INSTRUCTION:	<ul style="list-style-type: none"> • English full time scheme for classes with 5 and more international Erasmus+ students enrolled/accepted; • English 50% individually with the teacher + Polish 50% with Polish students or individual project work- scheme for classes with less than 5 international Erasmus+ students enrolled/accepted.
ASSESSMENT METHOD: (written exam, oral exam, class test, written reports, project work, presentation, continuous assessment, other – what type?)	written reports
COURSE CONTENT:	<p>The classes include selected physical and chemical analyzes of samples of various types of water and assessment of their quality based on standards.</p> <p>During laboratory classes, the effectiveness of selected water treatment processes, such as: aeration, coagulation, sedimentation and filtration on active beds is also assessed in removing water impurities and contaminants.</p>
ADDITIONAL INFORMATION:	Performing laboratory exercises based on prepared instructions.

FACULTY:	Civil Engineering, Environmental and Geodetic Sciences
FIELD OF STUDY:	Civil Engineering, Environmental and Geodetic Sciences
ERASMUS COORDINATOR OF THE FACULTY:	Tomasz Dąbrowski
E-MAIL ADDRESS OF THE COORDINATOR:	tomasz.dabrowski@tu.koszalin.pl
COURSE TITLE:	Water Treatment Systems
LECTURER'S NAME:	Renata Świderska-Dąbrowska
E-MAIL ADDRESS OF THE LECTURER:	renata.swiderska-dabrowska@tu.koszalin.pl
ECTS POINTS FOR THE COURSE:	3
COURSE CODE (USOS):	0511>0000E+WTS
ACADEMIC YEAR:	2025/2026
SEMESTER: (W – winter, S – summer)	W
HOURS IN SEMESTER:	30
LEVEL OF THE COURSE: (1 st cycle, 2 nd cycle, 3 rd cycle)	1st cycle
TEACHING METHOD: (lecture, laboratory, group tutorials, seminar, other-what type?)	Lecture
LANGUAGE OF INSTRUCTION:	<ul style="list-style-type: none"> • English full time scheme for classes with 5 and more international Erasmus+ students enrolled/accepted; • English 50% individually with the teacher + Polish 50% with Polish students or individual project work- scheme for classes with less than 5 international Erasmus+ students enrolled/accepted.
ASSESSMENT METHOD: (written exam, oral exam, class test, written reports, project work, presentation, continuous assessment, other – what type?)	Class test
COURSE CONTENT:	Lectures include topics on current issues of water treatment. The characteristics of water intended for water supply purposes; processes, devices and technological systems used in water treatment for consumption and industrial purposes are discussed. Great attention is paid to the problem of secondary water contamination in the water supply network.
ADDITIONAL INFORMATION:	Multimedia lectures ending with a visit to a water treatment plant.

Elective courses

Elective courses E1

You can choose **Cartography** or **Mathematical Cartography**, not both

FACULTY:	Civil Engineering, Environmental and Geodetic Sciences
FIELD OF STUDY:	Civil Engineering, Environmental and Geodetic Sciences
ERASMUS COORDINATOR OF THE FACULTY:	Tomasz Dąbrowski
E-MAIL ADDRESS OF THE COORDINATOR:	tomasz.dabrowski@tu.koszalin.pl
COURSE TITLE:	Cartography
LECTURER'S NAME:	Katarzyna Kraszewska, PhD
E-MAIL ADDRESS OF THE LECTURER:	Katarzyna.kraszewska@tu.koszalin.pl
ECTS POINTS FOR THE COURSE:	5
COURSE CODE (USOS):	0511>0000E+Cart
ACADEMIC YEAR:	2025/2026
SEMESTER: (W – winter, S – summer)	W
HOURS IN SEMESTER:	30+30
LEVEL OF THE COURSE: (1 st cycle, 2 nd cycle, 3 rd cycle)	1st cycle
TEACHING METHOD: (lecture, laboratory, group tutorials, seminar, other-what type?)	Lectures + Practical Classes
LANGUAGE OF INSTRUCTION:	<ul style="list-style-type: none"> • English full time scheme for classes with 5 and more international Erasmus+ students enrolled/accepted; • English 50% individually with the teacher + Polish 50% with Polish students or individual project work- scheme for classes with less than 5 international Erasmus+ students enrolled/accepted.
ASSESSMENT METHOD: (written exam, oral exam, class test, written reports, project work, presentation, continuous assessment, other – what type?)	Written exam
COURSE CONTENT	Types of maps and methods of their creation. Cartographic projections (azimuth, cylindrical, conical), Gauss Kruger projection. Common planar systems used in Poland after World War II.
ADDITIONAL INFORMATION:	

Elective courses E1

You can choose **Cartography** or **Mathematical Cartography**, not both

FACULTY:	Civil Engineering, Environmental and Geodetic Sciences
FIELD OF STUDY:	Civil Engineering, Environmental and Geodetic Sciences
ERASMUS COORDINATOR OF THE FACULTY:	Tomasz Dąbrowski
E-MAIL ADDRESS OF THE COORDINATOR:	tomasz.dabrowski@tu.koszalin.pl
COURSE TITLE:	Mathematical Cartography
LECTURER'S NAME:	Katarzyna Kraszewska, PhD
E-MAIL ADDRESS OF THE LECTURER:	Katarzyna.kraszewska@tu.koszalin.pl
ECTS POINTS FOR THE COURSE:	5
COURSE CODE (USOS):	0511>0000E+MC
ACADEMIC YEAR:	2025/2026
SEMESTER: (W – winter, S – summer)	W
HOURS IN SEMESTER:	30+30
LEVEL OF THE COURSE: (1 st cycle, 2 nd cycle, 3 rd cycle)	1st cycle
TEACHING METHOD: (lecture, laboratory, group tutorials, seminar, other-what type?)	Lectures + Practical Classes
LANGUAGE OF INSTRUCTION:	<ul style="list-style-type: none"> • English full time scheme for classes with 5 and more international Erasmus+ students enrolled/accepted; • English 50% individually with the teacher + Polish 50% with Polish students or individual project work- scheme for classes with less than 5 international Erasmus+ students enrolled/accepted.
ASSESSMENT METHOD: (written exam, oral exam, class test, written reports, project work, presentation, continuous assessment, other – what type?)	Written exam
COURSE CONTENT	Mathematical foundations of cartography. Methods of maps creation. Cartographic projections (azimuth, cylindrical, conical). Mathematical foundations of Gauss Kruger projection. Common planar systems used in Poland
ADDITIONAL INFORMATION:	

Elective courses E2

You can choose **Real Estate Cadastre** or **Legal Functioning of Land and Building Records**, not both

FACULTY:	Civil Engineering, Environmental and Geodetic Sciences
FIELD OF STUDY:	Civil Engineering, Environmental and Geodetic Sciences
ERASMUS COORDINATOR OF THE FACULTY:	Tomasz Dąbrowski
E-MAIL ADDRESS OF THE COORDINATOR:	tomasz.dabrowski@tu.koszalin.pl
COURSE TITLE:	Real Estate Cadastre
LECTURER'S NAME:	Agnieszka Czajka
E-MAIL ADDRESS OF THE LECTURER:	agnieszka.czajka@tu.koszalin.pl
ECTS POINTS FOR THE COURSE:	3
COURSE CODE (USOS):	0511>0000E+REC
ACADEMIC YEAR:	2025/2026
SEMESTER: (W – winter, S – summer)	W
HOURS IN SEMESTER:	30+15
LEVEL OF THE COURSE: (1 st cycle, 2 nd cycle, 3 rd cycle)	1st cycle
TEACHING METHOD: (lecture, laboratory, group tutorials, seminar, other-what type?)	Lectures + laboratory
LANGUAGE OF INSTRUCTION:	<ul style="list-style-type: none"> • English full time scheme for classes with 5 and more international Erasmus+ students enrolled/accepted; • English 50% individually with the teacher + Polish 50% with Polish students or individual project work- scheme for classes with less than 5 international Erasmus+ students enrolled/accepted.
ASSESSMENT METHOD: (written exam, oral exam, class test, written reports, project work, presentation, continuous assessment, other – what type?)	Class test, written reports, project work, presentation
COURSE CONTENT	<p>Lectures: The legal basis for the organization and functioning of the cadaster, land and building records. Documents constituting the basis for entry and changes in the cadaster database. Keeping records of land and buildings in the form of digital databases. Discussing detailed issues related to the keeping of records of land, buildings and premises. Setting boundaries. Distinctions under the provisions of the Geodetic and Cartographic Law. Delimitation under the Water Law Act. Land consolidation and exchange. Property division modes. Selected issues related to public road registration, agricultural and forest land protection, and personal data protection.</p> <p>Exercises: Setting boundaries. Distinctions under the provisions of the Geodetic and Cartographic Law. Delimitation under the Water Law Act. Own exercise: drawing up a border report. Divisions of agricultural real estate. Own exercise: list of record changes, supplementary map. Divisions of real estate based on the provisions of the local spatial development plan. Other division modes. Own exercise: preparation of the initial division project. Mergers and divisions of real estate. Land consolidation and replacement. Public roads, their numbering and records.</p>
ADDITIONAL INFORMATION:	Programs as AutoCAD, C-Geo will be used, also Internet, copies of parts of cadastral maps, list of changes in cadastral data, supplementary maps.

Elective courses E2

You can choose **Real Estate Cadastre** or **Legal Functioning of Land and Building Records**, not both

FACULTY:	Civil Engineering, Environmental and Geodetic Sciences
FIELD OF STUDY:	Civil Engineering, Environmental and Geodetic Sciences
ERASMUS COORDINATOR OF THE FACULTY:	Tomasz Dąbrowski
E-MAIL ADDRESS OF THE COORDINATOR:	tomasz.dabrowski@tu.koszalin.pl
COURSE TITLE:	Legal Functioning of Land and Building Records
LECTURER'S NAME:	Agnieszka Czajka
E-MAIL ADDRESS OF THE LECTURER:	agnieszka.czajka@tu.koszalin.pl
ECTS POINTS FOR THE COURSE:	3
COURSE CODE (USOS):	0511>0000E+LFLBR
ACADEMIC YEAR:	2025/2026
SEMESTER: (W – winter, S – summer)	W
HOURS IN SEMESTER:	30+15
LEVEL OF THE COURSE: (1 st cycle, 2 nd cycle, 3 rd cycle)	1st cycle
TEACHING METHOD: (lecture, laboratory, group tutorials, seminar, other-what type?)	Lectures + laboratory
LANGUAGE OF INSTRUCTION:	<ul style="list-style-type: none"> • English full time scheme for classes with 5 and more international Erasmus+ students enrolled/accepted; • English 50% individually with the teacher + Polish 50% with Polish students or individual project work- scheme for classes with less than 5 international Erasmus+ students enrolled/accepted.
ASSESSMENT METHOD: (written exam, oral exam, class test, written reports, project work, presentation, continuous assessment, other – what type?)	Class test, written reports, project work, presentation
COURSE CONTENT Legal Functioning of Land and Building Records:	<p>Lectures: The legal basis for the organization and functioning of the land and building records. Documents constituting the basis for entry and changes in the land and building records. Keeping records of land and buildings in the form of digital databases. Discussing detailed issues related to the keeping of records of land, buildings and premises. Land consolidation and exchange. Selected issues related to public road registration, agricultural and forest land protection, and personal data protection.</p> <p>Exercises: Divisions of agricultural real estate. Own exercise: list of record changes, supplementary map. Divisions of real estate based on the provisions of the local spatial development plan. Other division modes. Own exercise: preparation of the initial division project. Mergers and divisions of real estate. Public roads, their numbering and records.</p>
ADDITIONAL INFORMATION:	Programs as AutoCAD, C-Geo will be used, also Internet, copies of parts of cadastral maps, list of changes in cadastral data, supplementary maps.

Elective courses E3

You can choose **Real Estate Management** or **Management of Developed and Urbanized Real Estate**, not both

FACULTY:	Civil Engineering, Environmental and Geodetic Sciences
FIELD OF STUDY:	Civil Engineering, Environmental and Geodetic Sciences
ERASMUS COORDINATOR OF THE FACULTY:	Tomasz Dąbrowski
E-MAIL ADDRESS OF THE COORDINATOR:	tomasz.dabrowski@tu.koszalin.pl
COURSE TITLE:	Real Estate Management
LECTURER'S NAME:	Agnieszka Czajka
E-MAIL ADDRESS OF THE LECTURER:	agnieszka.czajka@tu.koszalin.pl
ECTS POINTS FOR THE COURSE:	4
COURSE CODE (USOS):	0511>0000E+REM
ACADEMIC YEAR:	2025/2026
SEMESTER: (W – winter, S – summer)	W
HOURS IN SEMESTER:	30+30
LEVEL OF THE COURSE: (1 st cycle, 2 nd cycle, 3 rd cycle)	1st cycle
TEACHING METHOD: (lecture, laboratory, group tutorials, seminar, other-what type?)	Lectures + exercises
LANGUAGE OF INSTRUCTION:	<ul style="list-style-type: none"> • English full time scheme for classes with 5 and more international Erasmus+ students enrolled/accepted; • English 50% individually with the teacher + Polish 50% with Polish students or individual project work- scheme for classes with less than 5 international Erasmus+ students enrolled/accepted.
ASSESSMENT METHOD: (written exam, oral exam, class test, written reports, project work, presentation, continuous assessment, other – what type?)	Class test, written reports, project work, presentation
COURSE CONTENT Real Estate Management:	<p>Lectures: Introduction – legal basis, definitions. Ownership of real estate (purchase of real estate, land and mortgage register). Purpose of the property. Legal basis of investment processes on the real estate market, fees and taxes on the real estate market.</p> <p>Exercises: Property ownership – land and mortgage register. Applications to land and mortgage register courts (draft). Sources of information about real estate (geoportals). Sources of information on taxes and fees related to real estate. Division of real estate under the Real Estate Management Act - division conditions, procedure, exceptions, technical documentation, administrative procedure. Consolidation and division of real estate - conditions of execution, procedure, documentation, procedure diagram.</p>
ADDITIONAL INFORMATION:	Programs, i.e. Autocad, Internet and copies of parts of cadastral maps, geoportals.

Elective courses E3

You can choose **Real Estate Management** or **Management of Developed and Urbanized Real Estate**, not both

FACULTY:	Civil Engineering, Environmental and Geodetic Sciences
FIELD OF STUDY:	Civil Engineering, Environmental and Geodetic Sciences
ERASMUS COORDINATOR OF THE FACULTY:	Tomasz Dąbrowski
E-MAIL ADDRESS OF THE COORDINATOR:	tomasz.dabrowski@tu.koszalin.pl
COURSE TITLE:	Management of Developed and Urbanized Real Estate
LECTURER'S NAME:	Agnieszka Czajka
E-MAIL ADDRESS OF THE LECTURER:	agnieszka.czajka@tu.koszalin.pl
ECTS POINTS FOR THE COURSE:	4
COURSE CODE (USOS):	0511>0000E+MDURE
ACADEMIC YEAR:	2025/2026
SEMESTER: (W – winter, S – summer)	W
HOURS IN SEMESTER:	30+30
LEVEL OF THE COURSE: (1 st cycle, 2 nd cycle, 3 rd cycle)	1st cycle
TEACHING METHOD: (lecture, laboratory, group tutorials, seminar, other-what type?)	Lectures + exercises
LANGUAGE OF INSTRUCTION:	<ul style="list-style-type: none"> • English full time scheme for classes with 5 and more international Erasmus+ students enrolled/accepted; • English 50% individually with the teacher + Polish 50% with Polish students or individual project work- scheme for classes with less than 5 international Erasmus+ students enrolled/accepted.
ASSESSMENT METHOD: (written exam, oral exam, class test, written reports, project work, presentation, continuous assessment, other – what type?)	Class test, written reports, project work, presentation
COURSE CONTENT	<p>Lectures: Introduction – legal basis, definitions. Ownership of real estate (purchase of real estate, land and mortgage register). Purpose of the property. Legal basis of investment processes on the real estate market, fees and taxes on the real estate market.</p> <p>Exercises: Property ownership – land and mortgage register. Applications to land and mortgage register courts (draft). Sources of information about real estate (geoportals). Sources of information on taxes and fees related to real estate. Division of real estate under the Real Estate Management Act - division conditions, procedure, exceptions, technical documentation, administrative procedure. Consolidation and division of real estate - conditions of execution, procedure, documentation, procedure diagram.</p>
ADDITIONAL INFORMATION:	Programs, i.e. Autocad, Internet and copies of parts of cadastral maps, geoportals.

Elective courses E4

You can choose **Threats to the Natural Environment** or **Principles of Environment Protection**, not both

FACULTY:	Civil Engineering, Environmental and Geodetic Sciences
FIELD OF STUDY:	Civil Engineering, Environmental and Geodetic Sciences
ERASMUS COORDINATOR OF THE FACULTY:	Tomasz Dąbrowski
E-MAIL ADDRESS OF THE COORDINATOR:	tomasz.dabrowski@tu.koszalin.pl
COURSE TITLE:	Threats to the Natural Environment
LECTURER'S NAME:	Bartosz Walendzik
E-MAIL ADDRESS OF THE LECTURER:	bartosz.walendzik@tu.koszalin.pl
ECTS POINTS FOR THE COURSE:	3
COURSE CODE (USOS):	0511>0000E+TNE
ACADEMIC YEAR:	2025/2026
SEMESTER: (W – winter, S – summer)	W
HOURS IN SEMESTER:	30
LEVEL OF THE COURSE: (1 st cycle, 2 nd cycle, 3 rd cycle)	1st cycle
TEACHING METHOD: (lecture, laboratory, group tutorials, seminar, other-what type?)	Lectures
LANGUAGE OF INSTRUCTION:	<ul style="list-style-type: none"> • English full time scheme for classes with 5 and more international Erasmus+ students enrolled/accepted; • English 50% individually with the teacher + Polish 50% with Polish students or individual project work- scheme for classes with less than 5 international Erasmus+ students enrolled/accepted.
ASSESSMENT METHOD: (written exam, oral exam, class test, written reports, project work, presentation, continuous assessment, other – what type?)	Class test
COURSE CONTENT	<p>Basic concepts related to technology and protection of the natural environment. The condition of the natural environment in Poland and the world. The science of modern ecological packaging. The problem of global warming and climate change. The decline of biodiversity and extinction of species. Impact of nutrients (nitrogen and phosphorus) on the natural environment. Threats to the forest environment. Water shortage problems.</p> <p>Environmental problems and health effects. The impact of demographic changes on the degradation of the natural environment. The legal aspect of the protection of the natural environment. Economic aspects of the protection of the natural environment. New concepts and technologies in the protection of the natural environment.</p>
ADDITIONAL INFORMATION:	

Elective courses E4

You can choose **Threats to the Natural Environment** or **Principles of Environment Protection**, not both

FACULTY:	Civil Engineering, Environmental and Geodetic Sciences
FIELD OF STUDY:	Civil Engineering, Environmental and Geodetic Sciences
ERASMUS COORDINATOR OF THE FACULTY:	Tomasz Dąbrowski
E-MAIL ADDRESS OF THE COORDINATOR:	tomasz.dabrowski@tu.koszalin.pl
COURSE TITLE:	Principles of Environment Protection
LECTURER'S NAME:	Bartosz Walendzik
E-MAIL ADDRESS OF THE LECTURER:	bartosz.walendzik@tu.koszalin.pl
ECTS POINTS FOR THE COURSE:	3
COURSE CODE (USOS):	0511>0000E+PEP
ACADEMIC YEAR:	2025/2026
SEMESTER: (W – winter, S – summer)	W
HOURS IN SEMESTER:	30
LEVEL OF THE COURSE: (1 st cycle, 2 nd cycle, 3 rd cycle)	1st cycle
TEACHING METHOD: (lecture, laboratory, group tutorials, seminar, other-what type?)	Lectures
LANGUAGE OF INSTRUCTION:	<ul style="list-style-type: none"> • English full time scheme for classes with 5 and more international Erasmus+ students enrolled/accepted; • English 50% individually with the teacher + Polish 50% with Polish students or individual project work- scheme for classes with less than 5 international Erasmus+ students enrolled/accepted.
ASSESSMENT METHOD: (written exam, oral exam, class test, written reports, project work, presentation, continuous assessment, other – what type?)	Class test
COURSE CONTENT	<p>The main objectives of the protection of the natural environment. Characteristics and potential threats to terrestrial ecosystems. Characteristics and potential threats to aquatic ecosystems. Air protection - goals and methods of protection. Basics of waste management. Sewage management. The condition of the natural environment in Poland and the world. Contemporary threats to the natural environment. The problem of global warming and climate change. Biodiversity decline. Environmental degradation and health. The impact of demographic changes on the degradation of the natural environment.</p> <p>Legal aspects of environmental protection. Economic aspects in the protection of the natural environment. Concepts of environmental protection. New technologies in the protection of the natural environment.</p>
ADDITIONAL INFORMATION:	