

Subject card

| Subject supervisor Feachers Lesson type | file | ECTS credi Assessmen draulic Enginee dr inż. Krzyszt dr inż. Witold | livery of instruction its at form ering -> Faculty of Szarf | | field of Subject resear at the u Polish 5.0 assess | tory subject g f study ct group relate ch in the field university | ed to scientific | | | |
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| Department of Geotec Subject supervisor Feachers | | draulic Enginee dr inż. Krzyszt dr inż. Witold | ering -> Faculty of Szarf | of Civil | | | | | | |
| Subject supervisor Feachers Lesson type | chnical and Hy | dr inż. Krzyszt dr inż. Witold | of Szarf | of Civil | and En | | assessment | | | |
| Teachers Lesson type | | dr inż. Witold | | | | Department of Geotechnical and Hydraulic Engineering -> Faculty of Civil and Environmental Engineering | | | | |
| Lesson type | | | Tisler | | dr inż. Krzysztof Szarf | | | | | |
| | | drinż Krzycz | dr inż. Witold Tisler | | | | | | | |
| | | dr inż. Krzysztof Szarf | | | | | | | | |
| Number of study | Lecture | Tutorial | Laboratory | Project | t | Seminar | SUM | | | |
| nours | 15.0 | 5.0 | 15.0 | 0.0 | | 0.0 | 35 | | | |
| E-learning hours included: 0.0 | | | | | | | | | | |
| | | | | Self-study SUM | | | | | | |
| Number of study nours | 35 | | 6.0 | | 84.0 | | 125 | | | |
| The aim of the class is | s to teach the s | students basics | of soil mechar | nics and | soil cla | ssification. | | | | |
| Course outcome | | Subject outcome | | | Method of verification | | | | | |
| [K6_K01] can think and act in a creative and enterprising way; can set priorities for the implementation of an individual or group task; understands the need for continuous training and professional responsibility for their activities and team | | Student is aware of the role of soil in the engineering tasks Student is able to work in the laboratory in a team | | | [SK2] Assessment of progress of work | | | | | |
| knowledge in the field of I mechanics, ground scient reclamation and geotechr basic knowledge about the composition of air, water a environmental pollution at processes responsible for formation and ways to receive them, knows the principle organization of sustainable management [K6_U16] can, when form and solving engineering the environmental engineering the environmental engineering evaluate, select and apply appropriate methods and recognize their non-technical discounts of the select and apply appropriate methods and recognize their non-technical discounts of the select and apply appropriate methods and recognize their non-technical discounts of the select and apply appropriate methods and recognize their non-technical discounts of the select and apply appropriate methods and recognize their non-technical discounts of the select and apply appropriate methods and recognize their non-technical discounts of the select and apply appropriate methods and recognize their non-technical discounts of the select and apply appropriate methods and recognize their non-technical discounts of the select and apply appropriate methods and recognize their non-technical discounts of the select and apply appropriate methods and recognize their non-technical discounts of the select and apply appropriate methods and recognize their non-technical discounts of the select and apply appropriate methods and recognize their non-technical discounts of the select and apply appropriate methods and recognize their non-technical discounts of the select and apply appropriate methods and recognize their non-technical discounts of the select and apply appropriate methods and recognize their non-technical discounts of the select and apply appropriate methods and recognize their non-technical discounts of the select and apply appropriate methods and recognize their non-technical discounts of the select and apply appropriate methods and the select and apply appropriate methods and the select and apply appropriate methods and the select and apply | | the scope of the course Student learnt soil classification in the scope of the course Student is knowledgeable about geotechnical problems | | [SW1] Assessment of factual knowledge [SU1] Assessment of task fulfilment | | | | | | |
| nd | course oute Course Course | clearning hours included: 0.0 Participation in classes included: 0.0 Participation in classes included: 0.0 Participation in classes included: 0.0 Implement of study ours Course outcome (6_K01] can think and act in a reative and enterprising way; can et priorities for the inplementation of an individual or roup task; understands the need or continuous training and rofessional responsibility for their ctivities and team (6_W04] possesses elementary inowledge in the field of land nechanics, ground science, land eclamation and geotechnics; has asic knowledge about the omposition of air, water and soil, invironmental pollution and rocesses responsible for their romation and ways to reduce them, knows the principles and rganization of sustainable water nanagement (6_U16] can, when formulating ind solving engineering tasks in invironmental engineering, | Participation in didactic classes included in study plan The aim of the class is to teach the students basics Course outcome Subject Course outcome Subject Student is awa in the engineer or roup task; understands the need or continuous training and rofessional responsibility for their civities and team Couver outcome Subject Student is awa in the engineer or their clivities and team Student is abled laboratory in a student is abled laboratory in a student is abled laboratory in a student is abled on ceclamation and geotechnics; has assic knowledge about the omposition of air, water and soil, nvironmental pollution and rocesses responsible for their ormation and ways to reduce nem, knows the principles and reganization of sustainable water nanagement Course outcome Student is abled by the scope of the sc | clearning hours included: 0.0 Participation in didactic classes included in study plan pumber of study Description of air, water and soil, nvironmental pollution and rogesses responsible for their crimation of sustainable water nanagement (6_U16] can, when formulating not surprocesses responsib for continuous training and rogesses responsible water nanagement (6_U16] can, when formulating not select and apply ppropriate methods and tools, ecognize their non-technical spects, including environmental, | Participation in didactic classes included in study plan Immber of study Immer of students basics of soil mechanics and Immer of the class is to teach the students basics of soil mechanics and Immer of the class is to teach the students basics of soil mechanics and Immer of the class is to teach the students basics of soil mechanics and Immer of the class is to teach the students basics of soil mechanics and Immer of the role of s | Participation in didactic classes included in study plan Important of study participlation in consultation in the engineering tasks of the role of soil in the engineering tasks of the engineering staks of the student is able to work in the laboratory in a team Important of study plan in study plan | Participation in didactic classes included in study plan umber of study Subject outcome Subject outcome Method of veri Skal on in the engineering tasks Student is able to work in the laboratory in a team Student learnt soil mechanics in the scope of the course Student learnt soil classification in the scope of the course Student learnt soil classification in the scope of the course Student learnt soil classification in the scope of the course Student learnt soil classification in the scope of the course Student is knowledgeable about geotechnical problems Student is able to solve exercises on geotechnics using analytical methods [SW1] Assessment of fulfilment Issueria. Issueria. | | | |

Data wygenerowania: 22.11.2024 02:16 Strona 1 z 3

| Subject contents | | | | | | | |
|--|--|---|---------------------------------|--|--|--|--|
| | Lectures:1. Introduction to soil mechanics2. Water in soil3. Filtration. Freezing of soils4. Stresses in soil5. Compressability of soil6. Strength of soils shear strength7. Bearing capacity of shallow foundations8. Consolidation9. Lateral stresses in soil: earth pressure10. Geotechnical failures. Soil reinforcement11. Stability of slopesLaboratory classes:1. Macroscopic tests on coarse soils and on fine soils2. Physical quantities of coarse soils3. State of coarse soils density index4. State of fine soils consistency limits5. Filtration6. Granulometric curve of a coarse soil7. Experiment with the Proctor apparatus8. Experiments with the oedometer9. Soil strength testing using the triaxial apparatus and the direct shear apparatus Auditorial classes: 1. Physical quantities of soils | | | | | | |
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| | 2. Water flow in soil | | | | | | |
| | 3. Stresses | | | | | | |
| | 4. Shear strength | | | | | | |
| | 5. Earth pressure | | | | | | |
| Prerequisites and co-requisites | Basic knowledge of classical mecha | nics, mathematics, geology | | | | | |
| Assessment methods | Subject passing criteria | Passing threshold | Percentage of the final grade | | | | |
| and criteria | auditorial classes passed | 100.0% | 0.0% | | | | |
| | laboratory work passed | 100.0% | 50.0% | | | | |
| | test | 45.0% | 50.0% | | | | |
| Recommended reading | Basic literature | Arnold Verruijt, Soil Mechanics, TU | Delft, 2012 | | | | |
| | Supplementary literature | Braja M. Das, Fundamentals of Geo Learning, 2012 | otechnical Engineering, Cengage | | | | |
| | eResources addresses | Uzupełniające Adresy na platformie eNauczanie: | | | | | |
| Example issues/ example questions/ tasks being completed | Lectures: Give a typical value of particle density of soilName the basic law describing the shear strength of soilWhat quantities are used in Darcy's Law? Laboratory: To perform every test in the laboratory. Prepare a lab report for each test. Test. Auditorial classes: | | | | | | |
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| | Prepare and present vertical stress values in the soil profile attached | | | | | | |
| Work placement | Not applicable | | | | | | |

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