

| STUDY MODULE DESCRIPTION FORM | | |
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| Name of the module/subject Concrete Structures | | Code 1010102111010113706 |
| Field of study Civil Engineering Second-cycle Studies | Profile of study (general academic, practical) (brak) | Year /Semester 1 / 1 |
| Elective path/specialty - | Subject offered in: Polish | Course (compulsory, elective) obligatory |
| Cycle of study: Second-cycle studies | Form of study (full-time, part-time) full-time | |
| No. of hours Lecture: - Classes: 15 Laboratory: - Project/seminars: 15 | | No. of credits 2 |
| Status of the course in the study program (Basic, major, other) (brak) | | (university-wide, from another field) (brak) |
| Education areas and fields of science and art | | ECTS distribution (number and %) |
| Responsible for subject / lecturer: dr inż. Teresa Grabiec-Mizera email: teresa.grabiec-mizera@put.poznan.pl tel. +48 061 665 2085 Faculty of Civil and Environmental Engineering 60-785 Poznań, ul.Piotrowo 5 | | Responsible for subject / lecturer: dr inż. Piotr Frąszczak email: piotr.fraszczak@put.poznan.pl tel. + 48 061 665 2085 Faculty of Civil and Environmental Engineering 60-785 Poznań, ul.Piotrowo 5 |
| Prerequisites in terms of knowledge, skills and social competencies: | | |
| 1 | Knowledge | A student has the knowledge of general mechanics and strength of materials, basis of theory of reinforced concrete structures, knows analysis principles of simple and complex RC elements design. A student knows building standards and requirements concerning design of building structures and their elements. |
| 2 | Skills | A student can estimate and report permanent and variable loads acting on building structures. Student can classify building structures, design RC structure elements and choose analytical or numerical solution of engineering problems. |
| 3 | Social competencies | A student understands the need for lifelong learning and knows how to interact in a group. |
| Assumptions and objectives of the course: -The gaining of knowledge and skills concerning design of RC slab elements (working in different way) in ULS and SLS. Analysis of building structures. Preparing for modeling of RC structures by the Autodesk Robot Structural Analysis Program. | | |
| Study outcomes and reference to the educational results for a field of study | | |
| Knowledge: | | |
| 1. A student knows the basic design method of RC slab elements in RC structures - [K 2 W02, K 2 W04, K 2 W14] 2. A student presents the design issues of spatial RC structures - [K 2 W04, K 2 W09, K 2 W14] 3. A student knows the range applying of computers program needed to analyse and design RC structures. - [K 2 W08, K 2 W16] | | |
| Skills: | | |
| 1. A student uses building standards of loads on building structures as well as in the static calculation and dimensioning of RC structures. - [K 2 W01, K 2 W02, K 2 W03,] 2. A student is able to design RC slab structures with taken frames into consideration - [K 2 W03, K 2 W13] | | |
| Social competencies: | | |
| 1. A student understands the need of lifelong learning, is able to organize the learning process of others. - [K 2 W02, K 2 W03] 2. A student is able to cooperate and work in a group - [K 2 W01, K 2 W06] 3. He correctly identifies and resolves problems associated with his profession - [K 2 W07] | | |
| Assessment methods of study outcomes | | |

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|--|--------------|-----------------------------|-----|---------|---------|-------------|--------|-------------|--------|--------|--------|--------------|------|----------|
| <p>-Credit of exercise classes Credit in written form (1.0h) Credit of projects Estimation of individual projects on the basis of calculations and structural drawings with a defence of submitted work Number of evaluation</p> <table border="0"> <tr> <td>[%]</td> <td>(grade)</td> </tr> <tr> <td>100- 91</td> <td>A excellent</td> </tr> <tr> <td>90- 75</td> <td>B very good</td> </tr> <tr> <td>74- 65</td> <td>C good</td> </tr> <tr> <td>64- 51</td> <td>D sufficient</td> </tr> <tr> <td>< 50</td> <td>E failed</td> </tr> </table> | | | [%] | (grade) | 100- 91 | A excellent | 90- 75 | B very good | 74- 65 | C good | 64- 51 | D sufficient | < 50 | E failed |
| [%] | (grade) | | | | | | | | | | | | | |
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| < 50 | E failed | | | | | | | | | | | | | |
| Course description | | | | | | | | | | | | | | |
| <p>-Form of teaching: classes Method of designing and dimensioning RC slab structures especially two-way reinforced slabs Load report in two-way reinforced slabs Dimensioning of reinforced concrete slab structures to bending and shear ULS, SLS. Form of teaching: projects Project of two-way reinforced slab</p> | | | | | | | | | | | | | | |
| Basic bibliography: | | | | | | | | | | | | | | |
| <p>1. Nilson H.A., Darwin D., Dolan w. Ch. Design Concrete Structures Mc Graw Hill Higher Education. 2004. 2. Mosley B., Bungey J., Hulse R. Reinforced Concrete Design Palgrave Macmillan. 2007.</p> | | | | | | | | | | | | | | |
| Additional bibliography: | | | | | | | | | | | | | | |
| Result of average student's workload | | | | | | | | | | | | | | |
| Activity | | Time (working hours) | | | | | | | | | | | | |
| 1. Participation in audience classes | | 15 | | | | | | | | | | | | |
| 2. Participation in design classes | | 15 | | | | | | | | | | | | |
| 3. Complete (at home) works involved in the project | | 15 | | | | | | | | | | | | |
| 4. Participation in the consultations associated with the audience and design classes | | 5 | | | | | | | | | | | | |
| 5. Preparing to the final test of classes content | | 10 | | | | | | | | | | | | |
| Student's workload | | | | | | | | | | | | | | |
| Source of workload | hours | ECTS | | | | | | | | | | | | |
| Total workload | 60 | 2 | | | | | | | | | | | | |
| Contact hours | 35 | 1 | | | | | | | | | | | | |
| Practical activities | 35 | 1 | | | | | | | | | | | | |