Name of the modulersubject Structural Mechanics Code Code Code Code Code Code Code Code			STUDY MODULE D	ESCRIPTION FORM			
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And 36 Responsible for subject / lecturer: dr hab. inz. Przemysław Litewka, prof. nadzw. email: przemysław Litewka@gmail.com tel. 061 6652468 Wydział Budownictwa I Inżynierii Środowiska ul. Piotrowo 5, 60-965 Poznań Prerequisites in terms of knowledge, skills and social competencies: 1 Knowledge Present in civil engineering studies or similar and in the structural mechanics from semester 3 2 Skills 3 Social competencies 3 Social competencies 1 Is concious of the necessity to broaden the theoretical knowledge to justify its use in the practical aspects of this work. Undestands the necessity of continuous self-education. Assumptions and objectives of the course: Solution of beams and frames by the stiffness method in classical and matrix version. Computation of critical force in frames. Knowledge in foundations of structural dynamics, computation of natural frequencies and dynamic coefficients. Study outcomes and reference to the educational results for a field of study Knowledge: 1. knows relations between displacements and loading in the range of statics, stability and dynamics for straight beams - [KSB_W06] 2. knows methods to form calculation models for plane frame structures with lumped mass - [KSB_W06] 3. knows the influence of larage axial forces on inte	Lectur Status o	e: 15 Classes of the course in the study	s: 15 Laboratory: - program (Basic, major, other) (brak)	Project/seminars: 1 (university-wide, from another fie (I	5 3 Id) Drak)		
Responsible for subject / lecturer: dr hab. in2. Przemysław Liłewka, prof. nadzw. mail: przemysław Liłewka @mail.com tel. 061 6652468 Wydział Budownictwa i Inżynierii Środowiska ul. Piotrowa, 5.60-665 Poznań Prerequisites in terms of knowledge, skills and social competencies: 1 Knowledge 2 Skills 2 Skills 3 Can efficiently use the knowledge and get it from available bibliographic. Can apply the known theory to solve practical arbeds. 3 Social 1 Is concious of the necessity to broaden the theoretical knowledge to justify its use in the practical aspects of his work. Undestands the necessity of continuous self-education. Assumptions and objectives of the course: Solution of beams and frames by the stiffness method in classical and matrix version. Computation of critical force in frames Knowledge in fundations of structural dynamics, computation of natural frequencies and dynamic coefficients. Study outcomes and reference to the educational results for a field of study Nowledge: 1. knows relations between displacements and loading in the range of statics, stability and dynamics for straight beams - [KSB_WO6] 2. knows methods to form calculation models for plane frame structures with lumped mass - [KSB_W06] 3. know the influence of large axial forces on internal	Luucan				and %)		
dr hab. inż. Przemysław Litewka, prof. nadzw. emaii: przemysław Litewka @gmail.com tel. 061 6652468 Wydział Budownictwa i Inżynierii Środowiska ul. Piotrowo 5, 60-965 Poznań Prerequisites in terms of knowledge, skills and social competencies: 1 Knowledge 1 Has basic knowledge in mathematics, theoretical mechanics, strength of materials in the scope present in civil engineering studies or similar and in the structural mechanics from semester 3 2 Skills Can efficiently use the knowledge and get it from available bibliographic. Can apply the known theory to solve practical problems. 3 Social competencies Is concious of the necessity to broaden the theoretical knowledge to justify its use in the practical aspects of his work. Undestands the necessity of continuous self-aducation. Assumptions and objectives of the course: Solution of beams and frames by the stiffness method in classical and matrix version. Computation of critical force in frames Knowledge in foundations of structural dynamics, computation of natural frequencies and dynamic coefficients. Study outcomes and reference to the educational results for a field of study KRoB_Wo6j . 2. knows methods to for calculation models for plane frame structures with lumped mass - [KSB_W06] 3. knows the influence of large axil forces and displacements in bar structures subjected to forces, thermal influence or support displacements - [KSB_U06]	Resp	onsible for subje	ect / lecturer:				
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- written exam					
- 2 written tests during the semester					
- 2 individual exercises					
Assessment of lecture					
Written exam (two dates - one in June, the second one in September)					
- exam duration time 2.5 hours					
Marking					
91 ? 100% very good (5.0)					
81 ? 90% good plus (4.5)					
71 ? 80% good (4.0)					
61 ? 70% satisfactory plus (3.5)					
51 ? 60% satisfactory (3.0)					
<50% unsatisfactory (2.0)					
Example class assessment					
2 written tests					
- stiffness mathod					
- dynamics					
Marking rules as with the exam					
Exercise marking					
Each student solves two individual exercises					
- checking method - individual consultations					
- mark yields from the special test within the example class test					
Course description					
Solution of kinematically indeterminate structures by the stiffness method. Slope-deflection formulae for elements loaded axially. Matrix version of stiffness method - stiffness matrix for a beam element. Second order theory and determinatio of critical loads. Stability of plane frames. Foundations of structural dynamics. Free and forced vibrations with and without damping for a single degree-of-freedom system. Dynamics of beams with continuous mass distribution - the slope-deflection formulae.					
Metody dydaktyczne: wykład - informacyjny monograficzny, ćwiczenia - metoda ćwiczeniowa i metoda projektowa.					
Basic bibliography:					
Additional bibliography:					

Result of average student's workload

Activity	Time (working hours)				
1. Udział w wykładach (godziny kontaktowe)	15				
2. Udział w ćwiczeniach (godziny kontaktowe)	15				
3. Udział w projektach (godziny kontaktowe i praktyczne)	15				
4. Przygotowanie do sprawdzianów pisemnych (ćwiczenia audytoryj	25				
5. Samodzielne studia literatury i wykonanie dodatkowych zadań ob	15				
6. Konsultacje	5				
Student's workload					
Source of workload	hours	ECTS			
Total workload	90	3			
Contact hours	50	2			
Practical activities	50	2			