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| **Course code** | CC8 |
| **Type and description** |  |
| **ECTS credit** | 1 |
| **Course name** | **Computational methods in non-linear solid mechanics II** |
| **Course name in Polish** | **Podstawy metod obliczeniowych nieliniowej mechaniki ciała stałego II** |
| **Language of instruction** | English |
| **Course level** | 8 PRK |
| **Course coordinator**  | **Zdzisław Więckowski** |
| **Course instructors** | **Paulina Świątkiewicz** |
| **Delivery methods and course duration** |

|  | **Lecture** | **Tutorials** | **Laboratory** | **Project** | **Seminar** | **Other** | **Total of teaching hours during semester** |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Contact hours |  |  |  | 15 |  | 0 | 15 |
| E-learning | No | No | No | No | No | No |  |
| Assessment criteria (weightage) | 0,00 |  |  | 1.00 |  | 0,00 |  |

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| **Course objective** | To get some experiences in application of modern computational methods to engineering problems of non-linear solid mechanics.  |
| **Learning outcomes** | After completing the course, a student will be able to:1. recognize and formulate the problems of non-linear mechanics (W1 P8S\_EG, U1 P8S\_UW, U4 P8S\_UU);2. understand the basic iterative procedures of solving non-linear problems (W1 P8S\_EG, U1 P8S\_UW, U4 P8S\_UU);3. understand the computational methods applied to problems of non-linear solid mechanics (W1 P8S\_EG, U1 P8S\_UW, U4 P8S\_UU).4. use properly available computer software to solve selected problems of non-linear solid mechanics (W1 P8S\_EG, U1 P8S\_UW, U4 P8S\_UU). |
| **Assessment methods** | evaluation of solutions of the problems dedicated individually to each student |
| **Prerequisites** | Computational methods in non-linear solid mechanics I (CC7) |
| **Course content with delivery methods** | PROJECT:Solution of several non-linear engineering problems using the finite element method. The problems are related to the material presented during the course ``Computational methods in non-linear solid mechanics I'' |
| **Basic reference materials** | 1. O. C. Zienkiewicz and R. L. Taylor, The Finite Element Method, volume I, McGraw-Hill, London, 5th edition, 2000.2. O. C. Zienkiewicz and R. L. Taylor, The Finite Element Method, volume II. McGraw-Hill, London, 5th edition, 2000.3. K-J. Bathe, Finite Element Procedures in Engineering Analysis, Prentice-Hall, Englewood Cliffs, 1982.4. G. Dhatt and G. Touzot, The Finite Element Method Displayed, John Wiley & Sons, Chichester, 1984.5. T. J. R. Hughes, The Finite Element Method: Linear Static and Dynamic Finite Element Analysis, Prentice-Hall International, Inc., New Jersey, 1987. |
| **Other reference materials** |  |
| **Average student workload outside classroom** | 10 hours |
| **Comments** |  |
| **Last update** | 5 April, 2019 |