**Course name:** Advanced Object-Oriented Programming Techniques  
**Course code:** FCS-00090  
**Course type:** obligatory  

**Entry requirements:**  
Object Oriented Programming (FCS-00012),  

**Course objectives:**  
Introduction to selected design patterns and their example applications in simple programs written and refactored during the Sw.  

**Course content:**  
Classes:  
- Specialization workshop: Writing/refactoring short program using chosen design patterns.  

**Teaching methods:**  
Informative lecture, lecture problem, programming,  

**Assessment methods:**  
Lecture: Final test covering the design patterns.  
Specialization workshop: short programs implementing the design patterns, written/refactored in Java by students, presented and explained orally to the teacher  

**Learning outcomes:**  
- LO1 enumerates and describes design patterns (including examples in written programs)  
- LO2 uses the design patterns in simple programs  
- LO3 designs (using the design patterns) and implements simple information systems  
- LO4 acquires extra knowledge concerning detail mechanisms of the selected programming languages from their technical documentation  

**Methods of assessing the learning outcomes:**  
- LO1: written or oral evaluation Sw: short theoretical tests  
- LO2: evaluation of written programs  
- LO3: Evaluation of the simple programs: their design and implementations  
- LO4: Evaluations of the simple programs (concerning used API of the programming language)  

**Student workload (in hours):**  
**Calculation:**  
1. Attendance at lectures -  
2. Attendance at specialist workshops -  
3. Preparation for specialization workshops (from the lecture and other sources) -  
4. Participation in student-teacher sessions -  
5. Realization of project tasks (with presentation) -  
6. Preparation for test -  

**Total:**  
| No. of ECTS credits | 150 |

**Basic references:**  

**Supplementary references:**  

**Organisational unit conducting the course:**  
Software Department  
**Author of the programme:**  
dr inż. Cezary Bołdak  

**Date of issuing the programme:**  
Feb. 17, 2022