Course title	High Performance Computing
Institute/Division	Faculty of Computer Science and Telecommunication/ Department of Computer Science
Course code	F-1.HPC
Erasmus subject code	11.3
Number of contact hours**	45 lecture hours (45h)
Course duration	1 semester (Spring)
ECTS credits	6
Course description (max 100 words)	Architectures for high performance computing - processors, parallel systems. OpenMP, MPI, Classical and parallel optimization. Basis of the x86 assembly language. Parallel algorithms for linear algebra and PDE simulation, GPGPU OpenCL/CUDA computations.
Literature	L. Ridgeway Scott, Terry Clark, Babak Bagheri, „Scientific Parallel Computing", Princeton University Press, 2005 Kevin Dowd, Charles Severance, "High Performance Computing", 2nd ed., O'Reilly, 1998.
Course type/organization	Lectures and Laboratories
Assessment method	Attendance, laboratories reports, exam
Prerequisites	Advanced C or C++ programming language, Basic parallel/concurrent programming. Basic knowledge of Linux operating system.
Primary target group	3-rd – 4-th year computer science students
Contact person	Filip Krużel, PhD filip.kruzel@pk.edu.pl
Remarks	

*please insert one of the following codes:
11.0 Mathematics, Informatics
11.1 Mathematics
11.2 Statistics
11.3 Informatics, Computer Science
11.4 Artificial Intelligence
11.5 Actuarial Science
11.9 Others Mathematics, Informatics

**1 lecture hour=45 minutes