

Table 5.2 Course description

Study program: Chemistry, Master's program			
Course title: Fortran			
Professor: Slavko Radenković			
Course type: optional			
ECTS credits: 5			
Prerequisites: BSc degree in Chemistry or related sciences			
Course objectives Fortran is widely used in computationally intensive areas of science, such as computational chemistry, computational physics, computational fluid dynamics, etc. Fortran has several different versions. The latest Fortran versions can support high performance (parallel) programming and object-oriented programming (Fortran 2003). This course can attend complete beginners with little or no programming background and experienced Fortran programmers who want to update their skills. The aims of this course are to provide coverage of a recommended subset of the newest versions of the Fortran programming language.			
Learning outcomes Students who successfully pass this exam should be capable of writing their own codes in Fortran.			
Course topics <i>Theoretical classes</i> History of Fortran; different versions and standards in Fortran; introduction to Fortran syntax: variables and statements, operators, control statements, arrays, interactive input/output; program units: functions, subroutines and modules; dynamic memory. <i>Practical classes</i> To create and modify Fortran programs students will use different text editors (vi editor in Linux and Notepad++ in Windows); student will learn how to use different Fortran compilers: Intel (ifort) and GNU (gfortran).			
Recommended literature 1. I. Chivers, J. Sleightholme, Introduction to Programming with Fortran, Springer-Verlag, London, 2012. 2. S. J. Chapman, Fortran 95/2003 For Scientists and Engineers (2nd Ed.), McGraw-Hill, 2007. 2. A.C. Marshall, Fortran 90 Course Notes, The University of Liverpool.			
Number of classes of active teaching			Other classes
Lectures: 2	Practicals: 2	Other forms of teaching: Consultations	
Teaching methods Problem-oriented teaching, practical training, seminar works, assignments.			
Knowledge assessment (maximum score 100)			
Pre-exam obligations	points	Exam	points
activity during the course	5	written	30
practical classes	5	oral	20
colloquium(s)	20		
Seminar(s)	20		