

Numerical Method					
Course Code CIF61010	Student Workload 90 hours	Credits (according to ECTS) 4.5	Semester Semester 3	Frequency each even-semester	Duration 16 meetings
1	Types of courses <i>Compulsary</i> (Faculty level)	contact hours 62,27 hours	independent study 52,5 hours	class size 40 students	
2	Prerequisites for participation				
3	Learning outcomes <ul style="list-style-type: none"> ● IF-ILO-3 Graduates are able to develop professional careers in the field of computer science based on quality aspects, data-based decision making, be responsible, and make continuous improvements. ● IF-ILO-4 Graduates have the ability to think computationally, design-based thinking, conduct analysis with scientific writing, and are able to apply the values of Technopreneurship in creating product innovations in the Systems or Information Technology domain. ● IF-ILO-6 Mastering mathematical concepts and/or theoretical computational statistics. 				
4	Subject aims <ul style="list-style-type: none"> ● Students are able to compare analytical and numerical approaches in solving mathematical problems. ● Students are able to explain the source of errors (errors) in numerical methods. ● Students are able to understand the basics of programming languages for the implementation of numerical methods. ● Students are able to apply the root search method of non-linear functions in the form of program code. ● Students are able to apply the method of solving a system of linear equations in the form of program code. ● Student are able to apply vector search methods and eigenvalues in the form of program code. ● Students are able to apply the concept of forecasting using regression and interpolation methods in the form of program code. ● Students are able to apply optimization methods in the form of program code. ● Students are able to apply differential methods in the form of program code. ● Students are able to apply integration methods in the form of program code. 				
5	Teaching methods				

	lectures, case study, class discussion, presentation
6	Assessment methods assignment, mid-term examination, end-term examination, project evaluation, practical-skill assessment
7	This module is used in the following degree programs as well Information Engineering
8	Responsibility for module
9	Other information 1. Steven C. Chapra, “ Applied Numerical Methods: With MATLAB for Engineers and Scientists”, McGraw-Hill, 2005 2. Rinaldi Munir, “Metode Numerik”, Penerbit Informatika Bandung, 2015. 3. Jaan Kiusalaas, “Numerical methods in engineering with Python 3”, Cambridge University Press