

## MODULE HANDBOOK

Course:	<b>Programming of Physics Computation</b>
Module Level:	Undergraduate
Code:	FIK303
Sub-heading, if applicable:	-
Courses included in the module, if applicable:	-
Semester/Term:	5 <sup>th</sup> / Third Year
Module Coordinator:	Dr. Khusnul Ain, S.T., M.Si.,
Lecturer(s):	Dr. Khusnul Ain, S.T., M.Si. and Dr. Ir. Soegianto Soelistiono, M.Si.
Language:	Bahasa Indonesia
Classification within the Curriculum:	Compulsory Course / <del>Elective Course</del>
Teaching format / class hours per week during semester:	3 hours of lectures (50 minutes / hour)
Workload:	3 hours of lectures, 3 hours of structural activities, 3 hours of individual study, 13 weeks per semester, and total 117 hours per semester ~ 3.9 ECTS*
Credit Points:	3
Requirement(s):	(FIT 201) Mathematical Physics I and (FIT 202) Mathematical Physics
Learning Goals/Competencies:	<p><b>General Competence (Knowledge):</b></p> <ol style="list-style-type: none"> <li>1. Identify and recognize fundamental techniques for developing simple programming using pseudo-code, flowchart and algorithm</li> <li>2. Develop the structure programming using Delphi</li> <li>3. Able to implement a program for simple physical problem simulation</li> </ol> <p><b>Specific Competence:</b></p> <ol style="list-style-type: none"> <li>1. To know evolution a variety of programming languages from the beginning until today</li> <li>2. To understand structure of sequential algorithm, conditional, recursion and its combination</li> <li>3. To understand array 1D and 2D</li> <li>4. Encode program summation and multiply two matrix</li> </ol>
Contents:	Algorithm, Flow chart, introduction of Delphi programming, Structure of programming, data type, syntax, conditional and recursion in computer programming, procedure and function, array 1D, array 2D, Dinamic Link Library, Visual Component Library, 2D Graphic, Integral.
Soft Skill Attribute:	Effort and ethic
Study/Exam Achievements:	<p>Students are considered competent and eligible to pass the course upon obtaining at least 40 of maximum score for the exams (midterm and final exam), structured activity (group discussion). Final score is calculated as follow: 20% assignment 1 + 20% assignment 2 + 30% midterm test + 30% final exam</p> <p>Final grade is defined as follow: A : 75 - 100</p>

	AB : 70 - 74.99 B : 65 - 69.99 BC : 60 - 64.99 C : 55 - 59.99 D : 40 - 54.99 E : 0 - 39.99
Forms of Media:	Powerpoint slides and LCD projectors, whiteboards
Learning Methods:	Lecture, assessments and group discussion
Literature(s):	1. Cullen, C.G., 1991, <i>Linier Algebra and Differential Equation</i> , 2nd ed. 2. Chapra, S.C. and Canale, R.P., 2002, <i>Numerical methods for Engineers with Personal Computer Application</i> , Mc Graw Hill, New York. 3. Yogyanto, 2005, <i>Pemrograman Delphi 6</i> , Andi offset 4. Soelistono, 2005, <i>Diktat Delphi 5.0</i>
Notes:	*Total ECTS = {(total hours workload × 50 min) / 25 hours Each ECTS is equals with 25 hours.