1.	Course		Mathematical Physics III
2.	Module Level	:	Undergraduate
3.	Code	:	FIT203
4.	Sub-heading, if applicable	:	-
5.	Courses included in the module, if applicable	:	--
6.	Semester/Term	:	4Th/Second year
7.	Module Coordinator :	:	Drs. Adri Supardi, M.S
8.	Lecture (s)		Drs. Siswanto, M.S.; Drs. Adri Supardi,M.S.; Drs. Pujiyanto M.Si and Drs. R. Arif Wibowo, M.Si
9	Language		Bahasa Indonesia
10	Classification Within the Curriculum		Compulsory course / ~~Elective Course~~
11	Teaching format/ class hours per week during semester		3 hourss of lectures (50 minutes/hour)
12	Workload :		3 hours of lectures, 3 hours of tutorial and structured activities, 3 hours of individual activities 14 weeks per semester, and total of 126hours per semester ~4.2 ECTS
13	Credit point		3
14	Requirement(s)		FIT202 Mathematical Physics II
	Learning Goals/ Cometencies	:	**General Competence (Knowledge)** After following this course, students are able to find the solution of the mathematical model, various problems of physics. **Specific Competence** 1. The ability to apply mathematics to solve simple physics problems 2. The ability to identify or formulate a mathematical model to solve physics problems 3. The ability to apply mathematics to solve problems in physics fields (mechanics, electricity and magnetism , quantum mechanics, special relativity, etc)
15	Contents	:	***Tensor Analysis,*** definition, Cartesian tensor, algebra of tensor, inertia tensor, stress tensor, non Cartesian coordinates, metric tensor, general coordinate transformations and tensor, covarian tensor, contravariant tensor, mixed tensor, Christoffel symbol, geodesic ***Function of Complex Variable***, analytic function, contour integral, Laurent series, residue theorem, finding residue, definite integral, residues at infinity, mapping, conformal mapping, electrostatic potential ***Integral Transform***, properties of Fourier transforms; odd and even functions; convolution and deconvolution; correlation functions and energy spectra; Parseval's theorem; Fourier

			transforms in higher dimensions , Laplace transforms, Laplace transforms of derivatives and integrals; other properties of Laplace transforms, solution of ordinary differential equation ***Calculus of Variations***, Euler equation, Branchistochrone problem, several dependent variable, Lagrange equation, constrained variation, physical variational principle
10.	Softskill Attribute	:	Effort and Ethic
11.	Study Exam Achievements	:	Students are considered to be competent and passed if at least get 50% of maximum mark of the midterm test, final examination, quizzes and home work. Final score is calculated as follow: 20 % homework + 10% quizzes + 32.5% midterm test + 32.5% final exam + 5% soft skill. Final grade is defined as follow : A : 75 – 100 AB : 70 - 74.99 B : 65 - 69.99 BC : 60 - 64.99 C : 55 - 59.99 D : 40 - 54.99 E : 0 - 39.99
	Learning Methods		Lecture, discussion, tutorial
12.	Forms of Media	:	Powerpoint slides, LCD projector and whiteboard
17.	Literature(s)	:	1. Boas,M.L.,*Mathematical Methods in the Physical Sciences*, 3rd ed.,JohnWiley, 2005. 2. Arfken, G.B and Weber, H.J., 2013, Mathematical Methods for Physicist, 7th ed, Academic Press 3. Hobson, Riley and J. Bence, 2006, *Mathematical Methods for Physics & Engineering,* Cambridge University Press. 4. Kreyszig,E., 2005, *Advanced Engineering Mathematics*, John Wiley, New York
	Notes		Total ECTS={(total hours workloadx50 min)/60 min}/25 hours Each ECTS is equals with 25 hours