Module Descriptions

A **module** is a self-contained **learning unit** within a higher education program that includes thematically related courses and is assigned a **fixed number of credits**. It follows specific **learning objectives**, includes an **assessment component**, and contributes to achieving the qualifications of a degree program. In some countries, “modules” are also named “courses”.

Please provide a module description for each module. In addition to the compulsory and elective modules, this also includes credited internships and the final thesis.

Please summarize all module descriptions in one document (Module Handbook) and create a table of contents so that the modules can be found easily.

Module designation	*Numerical Analysis*
Semester(s) in which the module is taught	*2*
Person responsible for the module	*Dr. Nikenasih Binatari S.Si., M.Si.* *Dr. Karyati, M.Si.*
Language	*Indonesian.*
Relation to curriculum	*Elective.*
Teaching methods	*Lecture, discussion and presentation.*
Workload (incl. contact hours, self-study hours)	*Total workload is 90.67 hours per semester which consists of 100 minutes lectures, 120 minutes structured activities, and 120 minutes self-study per week for 16 weeks.*
Credit points	*2*
Required and recommended prerequisites for joining the module	-
Module objectives/intended learning outcomes	*After taking this course the students have ability to:* *CO1. Explaining the fundamentals of numerical computation and errors.* *CO2. Using numerical computation to find the roots of nonlinear equations and solve systems of linear equations.* *CO3. Using numerical computation for polynomial interpolation and error estimation.* *CO4. Using numerical computation to determine approximations, numerical differentiation, and numerical integration.* *CO5. Implementing programming to solve numerical problems.*
Content	*The Numerical Methods course explores the fundamental concepts of computer arithmetic and various errors associated with it, solving single-variable equations using various methods, solving systems of linear equations using direct methods, systems of linear equations using iterative methods, and various interpolation techniques.*
Examination forms	*Presentations and written tests.*

Study and examination requirements	*The course assessment is divided into two main components:* 1. ***Cognitive Assessment (50%)*** *This includes the following elements:* ○ *Attendance: 10%* ○ *Quiz: 0%* ○ *Assignment:0%* ○ *Midterm Exam (UTS): 20%* ○ *Final Exam (UAS): 20%* 2. ***Participatory Assessment (50%)*** *This includes:* ○ *Case Study: 20%* ○ *Team-Based Project: 30%* ***Total: 100%***
Reading list	*1. Burden, R L., Faires, D J., Burden, A M. 2016. Numerical Analysis. Cengage Learning* *2. Atkinson, K, Han, W. 2004. Elementary Numerical Analysis 3th Ed. John Wiley & Sons Inc. Iowa* *3. Gerald, CF, Wheatly, PO. 1994. Applied Numerical Analysis. USA. Addison-Wesley Publishing Company.*