Module Description

Module Name	Physics of Ceramics
Module Level	Bachelor of Physics
Code	18H02131503
Courses (if applicable)	
Semester	Odd (5th)
Person responsible for the module	Dr. Nurlaela Rauf, M.Sc
Lecturer	1. Dr. Nurlaela Rauf, M.Sc. 2. Prof. Dr. Dahlang T., S.Si.,M.Si.
Language	Indonesian and English
Relation to Curriculum	Undergraduate programs, electives, semester 5
Type of Teaching, Contact Hours	**Teaching methods**: [group discussion], [case study], [project-based learning] **Teaching forms**: [lecture], [project] **Schedule**: Wednesday, 09.10 – 11.50
Workload	For this course, students are required to meet a minimum of 136.00 hours in one semester, which consist of: - 40.00 hours for lecture, - 48.00 hours for structured assignments, - 48.00 hours for private study
Credit Points	3 Credit Points (equivalent with 5.1 ECTS)
Requirements According to the Examination Regulations	A student must have attended at least 80% of the lectures to sit on the final examination.
Mandatory Prerequisites	-
Module objectives/intended learning outcomes	After completing the course, Students are able: **Intended Learning Outcomes (ILO):** ILO 3: Students are able to use the basic principles of physics in technology application. ILO 8: Students are able to develop their skill and maintain a network with colleagues **Course Learning Objective (CLO):** After completing this course, students are expected to be able to apply concepts and terms in Ceramic Physics. Additionally, they are expected to be able to apply material technology and the art of ceramics. **Sub CLO**

	and distinguish these properties based on their constituent atomic bonds. Additionally, they can explain the types and applications of ceramics. ILO-8⇒CO-2 (eight weeks): Students are able to explain several ceramic-making technologies, determine the basic materials of ceramics based on their functions and uses, manufacture ceramics according to their uses, and explain the relationship between basic materials, formation processes, and physical properties of ceramics for special purposes.
Content	Students will learn about: 1. Structure and Types of Atomic Bonds in Ceramics 2. Properties of Ceramics 3. Types and Applications of Ceramics 4. Ceramics Manufacturing and Forming Technology (firing, glazing, slab technique, hand molding, molding techniques, and rotary forming) 5. Journal Review of Ceramics Using Advanced and Innovative Materials
Forms of Assessment	Assessment techniques: [participation], [written test] Assessment forms: [mid-term exam], [final term exam], [assignment], [presentation] The number of Assesment and Evaluation: Assignment 1, 2, 3; Evaluation (Mid-Term, andFinal-Term); Presentation (discuss and project) Mid-term exam = 30%, Assignment = 15%, Final-Term = 30%, Presentation = 25%. CO 1 => ILO 3: 5% (Assignment 1) CO 1 => ILO 3: 5% (Assignment 2) CO 1 => ILO 3: 30% (Mid-Term: written test) CO 2 => ILO 8: 5% (Assignment 3) CO 2 => ILO 8: 20% (Presentation: discuss and project) CO 2 => ILO 3: 30% (Final-Term: written test)
Study and examination requirements and forms of examination	**Study and examination requirements:** - Students must attend 15 minutes before the class starts. - Students must switch off all electronic devices. - Students must inform the lecturer if they will not attend the class due to sickness, etc.

	Form of examination: ● Written and Quiz exam: Essay
Media Employed	LED, Whiteboard, Learning Management System (SIKOLA), WA, and/or Email.
Reading List	**Main:** 1. D. Singh and W. M. Kriven, (2010*), Mechanical Properties and Performance of Engineering Ceramics and Composite IV*, The American Ceramics Society, John Wiley & Son's, Hoboken, NewJersey. 2. D. Marinesca (2007), *Handbook of Advanced Ceramics Machining*, Taylor & Francis Group, Broken Sound Parkway NW, Suite 300, Boca Raton.