

Module name	M3: Material Research			
Module level	2			
Code	M1			
Semester	1, 2			
Person responsible for module	Head of Study Program			
Courses	<p>Advanced Material (2 credits) Quantum and Computational Chemistry (3 credits) Electrochemical Analysis (3 credits)</p> <p>Elective: (minimum 4 credits)</p> <p>Inorganic reaction mechanism Functional Materials Chemical catalyst Sensor dan Biosensor Energy Conservation Bioenergy Green and Sustainable Chemistry Adsorption Technology Waste Management Technology</p>			
Lecturer	Prof. Riyanto, Ph.D. Prof. Dr. Is Fatimah Dr. Noor Fitri Allwar, Ph.D. Rudy Syahputra, Ph.D.			
Language	Indonesia			
Relation to curriculum	Compulsory			
Type of teaching and learning	Class size	Attendance per week (h)	Form of active participation	Workload
Teaching, discussion, task	70 meetings	2 – 3	Discussion, writing, tasks	Lecture: 140-150 h Writing task: 280-300 h = 16.67 ECTS
Total workload	Lecture (class): 96-120 h • Total Structured activities: Writing, presentation, and discussion task: 192-200 h • Exam: 10 times (depending on the kind of examination and evaluation system)			
Prerequisite	None			
Related course	Further specific major courses			
Module objectives/intended learning outcomes	Students have ability to construct the concept of material research and development from the theoretical basic, choosing analytical method,			

	and create the innovative thinking in material research and development.
Content	The contents are related to the design, synthesis, physicochemical analysis and applicability of materials. The module includes compulsory courses within the subject of materials for energy and environment specification, and some elective course that allow the student to acquire the necessary perspective of material research development.
Study and examination	Writing, presentation, project tasks
Media employed	Online, offline; Youtube; and all related online courses