Module Handbook

Module Name:	Synthesis and Characterizations of Electronic Materials
Module Level:	Bachelor
Abbreviation, if applicable:	FI3231
Sub-heading, if applicable:	
Courses included in the module, if applicable:	
Semester/term:	Third Years
Module coordinator(s):	
Lecturer(s):	
Language:	Bahasa Indonesia
Classification within the curriculum:	~~General Studies~~ / ~~Major Subject~~ / Elective Studies
Teaching format / class hours per week during the semester:	2 hours lectures
Workload:	2 hours lectures, 4 hours individual study and Laboratories work, 16 weeks per semester, and total 96 hours a semester
Credit Points:	2
Requirements:	1. Electronics 2. Solid State Physics
Learning goals/competencies:	Knowledge: 1. Demonstrate knowledge and to apply principle and concept of physics on clean room technology and material/substrate/wafer cleaning technology 2. Demonstrate knowledge of structure quantum and its application in thin film growth process Skills: 1. Ability to apply principle and concept of physics vacuum, lithography, and etching technology 2. Demonstrate knowledge of assembly technology and integration process 3. Demonstrate knowledge of chemical solution deposition process, liquid solution for semiconductor, deposition for thin film and engineered nanomaterials for precursor solution 4. Demonstrate ability to deliver an oral presentation 5. Ability to writing report in appropriate scientific and popular style
Content:	In this course will be systematically discussed following topic: (1) cleanroom technology, (2) substrate/wafer cleaning technique, (3) vacuum technology (4) quantum structure fabrication and thin film deposition technique. (5) lithography and etching technology (6) process integration (7) Assembly and packaging technology (8) Chemical solution deposition technology such as sol-gel, CBD, spin coating, dip coating, spray coating methods, etc (10)technology liquid solution for semiconductor, (11) Deposition technology with solution
Study/exam achievements:	Students are considered to be competent and pass if at least get 50% of examinations (mid-term test, final test, quizzes), homework, Research based learning.
Forms of Media:	Slides and LCD projectors, blackboards, lab.
Literature:	1. C.Y.Chang and S.M.Sze, ULSI Technology, McgrawHill, 1996 (Utama) 2. P.Siffert and E.Krimmel, Silicon Evolution and Future of a Techology, Springer, 2003

	3. S.M Sze, Semiconductor Devices physics and technology, 2nd ed. Wiley, 2001 4. D. B. Mitzi, Solution Processing of Inorganic Materials, Wiley, 2009
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