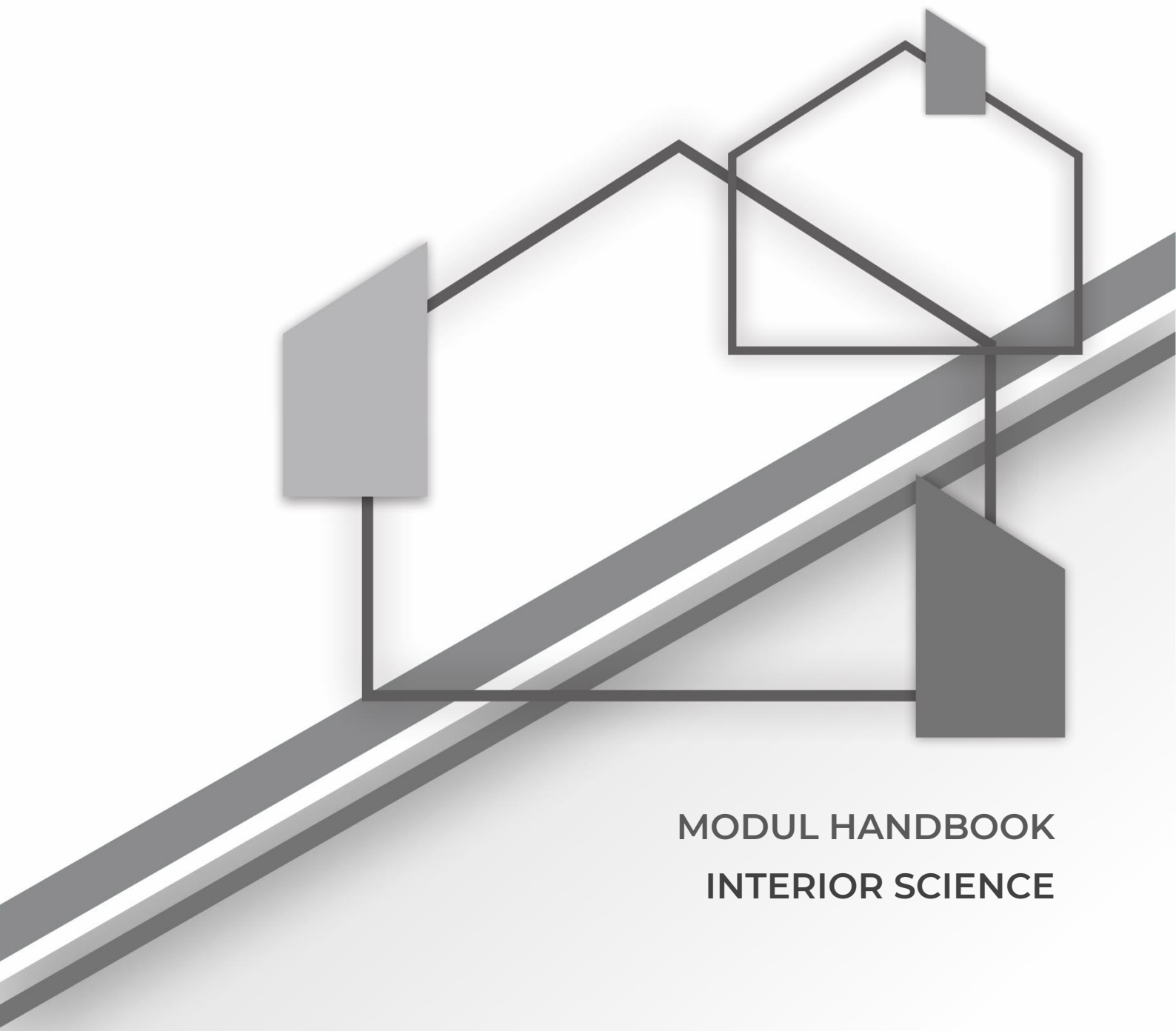
MODUL HANDBOOK
INTERIOR SCIENCE

Bachelor Degree Program
Department of Interior Design
Faculty of Creative Design and Digital Business

Institut Teknologi Sepuluh Nopember



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Description of Course Unit

Course unit title	Interior Science
Course unit code	DI184523
Type of course unit (compulsory, optional)	Compulsory
Level of course unit (according to EQF: first cycle Bachelor, second cycle Master)	First Cycle Bachelor
Year of study when the course unit is delivered (if applicable)	3th year
Semester/trimester when the course unit is delivered	5th
Number of ECTS credits allocated	4,8 Credits
Name of lecturer(s)	Okta Putra Setio Ardianto, S.T, M.T
Learning outcomes of the course unit	1. Students are able to know and master the knowledge about the aspect of interior physical comfort (ventilation, lighting and acoustics) 2. Students are able to know and master the knowledge about aspects of building utilities in interior (mechanical and electrical) 3. Students know and master knowledge about the aspect of building security in interior. 4. Students are able to work together in groups to analyze and propose integrated schematic solutions on interior science issues.
Mode of delivery (face-to-face, distance learning)	Face-to-face
Prerequisites and co-requisites (if applicable)	-
Course content	1. Aspects of natural and artificial ventilation comfort in interior 2. Aspects of natural and artificial lighting comfort in interior 3. Aspect of acoustic comfort in interior 4. Aspects of mechanical systems, electronics and building piping in interior 5. Aspect of building security system in interior
Recommended or required reading and other learning resources/tools	1. Latifah, Nur Laila (2015). Fisika Bangunan Jilid I. Penerbit Griya Kreasi. Jakarta 2. Latifah, Nur Laila (2015). Fisika Bangunan Jilid II. Penerbit Griya Kreasi. Jakarta 3. Szokolay, Steven (2004). Introduction to Architectural Science. Architectural Press. MA 4. Heerwagen, Deer (2004). Passive and active environmental control-Informing the schematic designing of buildings. McGraw Hill. New York. 5. Roberts, J. H., McKinnon, W. B., Elder, C. M., Tobie, G., Biersteker, J. B., Young, D., ... & Pappalardo, R. (2023). Integrated Interior Science with Europa Clipper. *Space Science Reviews*, *219*, 46. 6. Aji, W. B. (2017). Desain interior discovery sains di Surabaya. *SKRIPSI-2017*.

Planned learning activities and teaching methods	Problem-Based Learning, Project-Based Learning and Blended Learning
Language of instruction	Bahasa and English
Assessment methods and criteria	Assignment, Project, Quiz, Midterm Exam and Final Exam

Learning Outcome (LO)

LO	Description
LO2	Able to think critically and creatively in preparing interior design ideas/ concepts
LO5	Able to utilize environmental and maritime technology in the field of interior design
LO7	Mastering basic knowledge of aesthetics, behavior and technology in the field of interior design
LO8	Mastering practical design knowledge about Geometry, building, communication (drawing), methodologies and consequences in the field of interior design

Course Learning Outcome (CLO)

CLO	Description	Mapping of CLO to LO				Weight of CLO (%)
		LO 2	LO 5	LO7	LO8	
CLO1	Able to think critically and creatively in drafting interior design ideas/concepts based on sound, air and natural lighting	x				30
CLO2	Able to utilize green building-oriented technology in the field of interior design		x			30
CLO3	Mastering basic knowledge of supporting technology in interiors			x		20
CLO4	Mastering practical knowledge of building physics-based design, and its consequences in the field of interior design				x	20

Asessment Plan

No.	Course Learning Outcomes*	Asessment Technique	Asessment Weight (%)
1	**CLO1** Able to think critically and creatively in drafting interior design ideas/concepts based on sound, air and natural lighting	Natural based interior design concept (Team-based Project)	30
2	**CLO2** Able to utilize green building-oriented technology in the field of interior design	Tech-based in interior design concept (Team-based Project)	30
3	**CLO3** Mastering basic knowledge of supporting technology in interiors	Interior review, based on tech (Cognitive – Assignment)	20
4	**CLO4** Mastering practical knowledge of building physics-based design, and its consequences in the field of interior design	Calculating lighting and AC need (Cognitive – Assignment)	20
Total Assessment Weight			100

Learning Outcome Plan

Week	Sub Achievement-Subject Final Ability	Breadth (Learning Material)	Learning Method	Estimated Time	Students Learning Experience	Assessment Criteria and Indicator
1, 2	Students are able to explain the concept, benefits and relationship of Interior Science course subject to other subjects	Introduction and Knowledge about interior science in interior building system, its function and benefits	Lecture and interactive discussion	2 lectures / meetings @ 150 minutes (Assignment I: Interior science aspect with case study of shopping center buildings)	Discussion and case study	- Attendance and students activity during class discussion - Quality of data, communication and visual of presentation
3, 4	Students are able to master and apply the knowledge of physical environment comfort in interior, especially the ventilation aspect.	Introduction and Knowledge about natural and artificial ventilation aspect in interior	Lecture and interactive discussion	2 lectures / meetings @ 150 minutes (Assignment II: Analyzing existing condition and requirement of natural and artificial ventilation with case study of studio room)	Discussion, observation, measurement and calculation.	- Attendance and students activity during class discussion - Accuracy of observation, measurement, and calculation results - Quality of data, communication and visual of presentation
5, 6	Students are able to master and apply the knowledge of physical environment comfort in interior, especially the lighting aspect and electrical system.	- Introduction of natural and artificial lighting aspects in the interior. - Introduction to electronics systems as supporting aspects of artificial lighting in the interior	Lecture and interactive discussion	2 lectures / meetings @ 150 minutes (Assignment III: Analyzing existing condition and requirements of natural and artificial lighting (with electrical parts) with case study of studio room)	Discussion, observation, measurement and calculation.	- Attendance and students activity during class discussion - Accuracy of observation, measurement, and calculation results - Quality of data, communication and visual of presentation
7, 8	Students are able to master and apply the knowledge of physical environment comfort in interior, especially the	Introduction and Knowledge about acoustic aspect in interior	Lecture and interactive discussion	2 lectures / meetings @ 150 minutes (Assignement IV: Analyzing existing	Discussion, observation, measurement and calculation.	- Attendance and students activity during class discussion - Accuracy of

	acoustic aspect.			condition and acoustic system requirement with case study of conference room)		observation, measurement, and calculation results - Quality of data, communication and visual of presentation
9	Students are able to master and apply the knowledge of physical environment comfort	Midterm examination	Examination in class	1 lecture / meeting, 90 minutes	Examination, closed book	- Attendance and dicipline during exam - Accuracy of answers and proposed solutions to the problem of physical aspects of interior science
10, 11	Students are able to master and apply the knowledge of building piping system in interior	Introduction and Knowledge about building piping systems in interior	Lecture and interactive discussion	2 lectures / meetings @ 150 minutes (Assignment V: Find piping system data and proposal with case study of interior design project)	Discussion, observation, measurement and calculation.	- Attendance and students activity during class discussion - Accuracy of observation, measurement, and calculation results - Quality of data, communication and visual of report
12, 13	Students are able to master and apply the knowledge of building security system in interior	Introduction and Knowledge about building security systems in interior	Lecture and interactive discussion	2 lectures / meetings @ 150 minutes (Assignment VI: Find security system data and proposal with case study of interior design project)	Discussion, observation, measurement and calculation.	- Attendance and students activity during class discussion - Accuracy of observation, measurement, and calculation results - Quality of data, communication and visual of report
14, 15	Students are able to master and apply the	Review of physical comfort aspect and its	Discussion and interactive consulation	2 lectures / meetings @ 150 minutes	Discussion, observation,	- Students activity and consultation

	ability of interior physical comfort aspects of the case study.	integration to the interior.		(Final project: Creating interior physics comfort proposal (ventilation, lighting, and acoustics) with case study of interior design project)	measurement and calculation.	quality - Accuracy of observation, measurement, and calculation results.
16	Students are able to master and apply the ability of the interior physical comfort aspects of the case study.	Final examination	Assignment submission	1 lectue / meeting	The collection and assessment of final assignment	- Attendance and discipline when submitting assignment - Accuracy of proposal about solving problems of interior science physical aspects

REFERENCES (max 5):

1. Latifah, Nur Laila (2015). Fisika Bangunan Jilid I. Penerbit Griya Kreasi. Jakarta
2. Latifah, Nur Laila (2015). Fisika Bangunan Jilid II. Penerbit Griya Kreasi. Jakarta
3. Szokolay, Steven (2004). Introduction to Architectural Science. Architectural Press. MA
4. Heerwagen, Deer (2004). Passive and active environmental control-Informing the schematic designing of buildings. McGraw Hill. New York.

Note:

* Presentation