13. MO18-5209 Safety and Reliability of Marine System

Module name	Safety and Reliability of Marine System
Module level, if applicable	Master
Code, if applicable	MO18-5209
Subtitle, if applicable	-
Course, if applicable	Safety and Reliability of Marine System
Semester	2nd Semester
Person responsible for the module	Prof. Ir. Daniel M. Rosyid, Ph.D. Dr. Eng. Yeyes Mulyadi, S.T., M.Sc.
Lecturer	Prof. Ir. Daniel M. Rosyid, Ph.D. Dr. Eng. Yeyes Mulyadi, S.T., M.Sc.
Language	Indonesian
Relation to curriculum	Elective course for master degree program in Ocean Engineering
Type of teaching, contact hours	Lecture, <50 students 150 minutes x 16 weeks per semester
Workload	1. Class, 3 × 50' = 150 minutes per week 2. Independent Study, 3 × 60' = 180 minutes per week 3. Structured Activities, 3 × 60' = 180 minutes per week
Credit points	3 CREDITS ~ 4.8 ECTS CREDITS × 1.6 ECTS
Requirements according to the examination regulations	A student must have attended at least 80% of the lectures to sit in the exams.
Recommended prerequisites	-

Learning outcomes **and their corresponding PLOs**	CLO.1. Able to understand, explain and conduct assessment on marine operation system by considering the basics of health and safety management system (HSE). CLO.2. Able to understand the concept of health and safety management system (HSE); CLO.3. Able to explain basic concepts of reliability-based design.	LO.3. Able to carry out scientific and technological development in ocean engineering through independent research
Content	This lecture will discuss about the safety and reliability of marine system. Reliability based design is explained. This course contains of following materials: ▪ Reliability and Safety: An Introduction ▪ Safety Management System of HSE ▪ ISM and ISPS Codes ▪ Audit, Investigation, and Inspection of HSE ▪ Process safety management system: Concept, principal & methodology ▪ Offshore structural integrity management system ▪ Design criteria & Procedures Requirement ▪ Reliability-Based Design for Offshore Building in accordance with Standard and Code ▪ Safety Integrity	
Study and examination requirements and forms of examination	14. In-class exercise 15. Assignment 16. Mid-term exam 17. Final exam	
Media employed	Offline: LCD, whiteboard, PowerPoint presentation Online: websites (myITS Classroom), Zoom, Microsoft Teams, PowerPoint presentation.	

Reading list	1. Gerwick, Ben C. "Construction of Marine and Offshore Structures, 3rd edition", CRC Press, Taylor and Francis Group, 2007 2. Subrata K. Chakrabarti:Handbook of Ocean Engineering, Elsevier, London, 2005. 3. Errizal, "Safety and Occupational Health (Keselamatan dan Kesehatan Kerja/ K3)", IPB, Bogor 4. Ramli, Soehatman," Safety management system of HSE (Sistem Manajemen K3): OHS Management system", Jakarta 2016 5. API RP 2A WSD 21st Edition, Recommended Practice for Planning, Designing and Constructing Fixed Offshore Platforms—Working Stress Design, 2010 6. API RP 2 SIM "Structural Integrity Management of Fixed Offshore Structures", 2014 7. ABS, "Guidance Notes on Risk Assessment Applications For The Marine And Offshore Oil And Gas Industries", June 2000 8. Oil &Gas UK, "Mooring Integrity Guidance", Report 080406 Rev F 9. International Safety Management Code Resolution A.741(18) as amended by MSC.104(73), MSC.179(79), MSC.195(80) and MSC.273(85) 10. OHSAS 18001: Occupational Health and Safety Management, 2007 11. BPMIGAS, "Sistem Manajemen Keselamatan dan Kesehatan Kerja Kontraktor K3S", PTK, No: 016/PTK/III/2007