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| Course Title | **Safety and Risk Management** | | | | | | |
| Course Code | MANS-312 | | | | | | |
| Course Type | Required | | | | | | |
| Level | 1st Cycle | | | | | | |
| Year / Semester | 3rd Year, Fall Semester | | | | | | |
| Teacher’s Name |  | | | | | | |
| ECTS | 3 | Theory | | Laboratory | Simulation | | Tutorial |
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| Course Purpose and Objectives | The main objectives of the course are to:   * Ensure a thorough knowledge and understanding of the rules, regulations and recommended practices for safety management in maritime transport * Understand the basic concepts, principles and terms of risk assessment and safety management; * Ensure understanding of the IMO’s Formal Safety Assessment process. * Provide knowledge of the basic issues relating to the improvement of safety in the maritime industry. | | | | | | |
| Learning Outcomes | After completion of the course students are expected to be able to:   * Explain the history of safety development in maritime transport in reactive and proactive safety improvement approaches. * Organize and apply basic principles, concepts and terms of risk assessment and safety management within the maritime transport context. * Classify and select theories and methods for accident analysis and risk analysis as approaches to safety improvement in the maritime industry. * Compose and perform accident analysis from accident documentation to analytical explanation of possible causation processes, and document into an accident report. * Evaluate given accident reports as basis for risk comprehension. * Classify traffic based risk assessment models, and perform traffic based risk assessment analysis of a set of fairway situations. * Classify and perform basic estimation of material damage consequences after contact accidents. * Organize and perform a risk analysis process according to IMO’s Formal Safety Assessment process, including choice and use of appropriate theories and methods for hazard identification, risk assessment, risk control measure, and cost benefit assessment. | | | | | | |
| Prerequisites | None | | Required | | | None | |
| Course Content | The risk concept. Risk picture. What is an accident? Accident statistics.  Preventive and ameliorating measures.  Risk objectives, data and risk acceptance criteria.  Maritime traffic models; probability of grounding and collision. Consequence estimation. Risk analysis methods: Hazard analysis, FTA, ETA, FMECA, HazOp. Human reliability; error mechanisms and modelling approaches.  Risk control measures and options. Cost-benefit analysis of risk control measures. Formal safety assessment (FSA) and risk based ship design.  Accident analysis; analysis and modelling of ship casualties. Analysis and modelling of ship accidents. Catastrophe behaviour, evacuation and rescue.  Regulation and official control of maritime safety. National and international control authorities. The ISM Code – the International Safety Management Code.  Auditing, Marine Insurance; risk analysis and risk management. | | | | | | |
| Teaching Methodology | Lectures, Directed and Background Reading, Case Study Analysis and Discussion, Academic Paper Discussion In-class Exercises, Student-led Presentations | | | | | | |
| Bibliography | **Required Textbooks**   |  |  |  |  |  | | --- | --- | --- | --- | --- | | **Authors** | **Title** | **Publisher** | **Year** | **ISBN** | | Rausand, M | Risk Assessment - Theory, Methods and Applications | John Wiley & Sons, Inc | 2011 |  |   **Recommended Textbooks/Reading**   |  |  |  |  |  | | --- | --- | --- | --- | --- | | **Authors** | **Title** | **Publisher** | **Year** | **ISBN** | | Chengi Kuo | Managing Ship Safety | LLP | 1998 |  | | Kristiansen S. | Maritime Transportation: Safety Management and Risk Analysis | Routledge | 2004 |  | | | | | | | |
| Assessment | Coursework, Case studies & Projects, Mid-Term Exam, Final Exam | | | | | | |
| Language | English | | | | | | |