

**College of Micronesia – FSM**  
**P.O. Box 159**  
**Kolonia, Pohnpei**

**Course Outline Cover Page**

**Global Maritime Distress and Safety System**

Course Title

**MM 172**

Department and Number

**Course Description:** To provide the learner with the knowledge and skills required to operate shipboard Global Maritime Distress and Safety System (GMDSS) installations.

**Prepared by:** Brent Villiers

**State:** FSM-FMI

	Hours per Week	No. Of Weeks	Total Hours	Semester Credits
Lecture	8/16	2/1	16	1
Laboratory	18/9	4/8	72	1.5

Total Semester Credits: 2.5

**Purpose of Course**

Degree Requirement \_\_\_\_\_  
Degree Elective \_\_\_\_\_  
Advanced Certificate \_\_\_\_\_  
Certificate \_\_\_\_\_  
Remedial \_\_\_\_\_  
Other (Workshop) \_\_\_\_\_

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**Prerequisite Course(s):** Nil

\_\_\_\_\_  
Signature, Chairman, Curriculum Committee

\_\_\_\_\_  
Date Approved by Committee

\_\_\_\_\_  
Signature, President, COM-FSM

\_\_\_\_\_  
Date Approved by the President

**General Objective:** To provide the learner with the knowledge and skills required to operate shipboard GMDSS installations.

**Learning Outcomes:** On successful completion of this course the student will be able to:

1. State the background and purpose of GMDSS.
2. Describe the principles and basic features of the maritime mobile service.
3. Describe the principles and basic features of the maritime mobile satellite service.
4. Outline the Global Maritime Distress and Safety System.
5. Describe the purpose and use of DSC.
6. Outline the general principles of NBDP.
7. Demonstrate knowledge and use of Inmarsat systems.
8. Demonstrate knowledge and practical use of ship station equipment.
9. Demonstrate fault location and rectification on marine electronic equipment.
10. Access MSI services.
11. Outline SAR operation.
12. Demonstrate GMDSS terrestrial distress, urgency and safety procedures
13. Demonstrate GMDSS satellite distress, urgency and safety communication procedures.
14. Outline methods for the protection of distress frequencies and avoidance of distress alerts
15. Demonstrate an ability to use the English language, written and spoken, for the exchange of communications relevant to the safety of life at sea and keyboard skills.
16. Describe obligatory procedures and practices
17. Demonstrate a practical and theoretical knowledge of general communications procedures.

***STUDENTS SHOULD BE MADE AWARE OF OCCUPATIONAL HEALTH AND SAFETY ISSUES IN ALL SITUATIONS AND BE EXPECTED TO DEMONSTRATE SAFE WORKING PRACTICES AT ALL TIMES.***

**Outline of Content:**

This course contains:

1. Introduction to GMDSS
  - Definition of sea areas
  - Dates of implementation
  - Details of carriage requirements
  - Communications equipment used in each area
  - Methods of distress, urgency and safety alerting
  - Certification
2. Principles of Maritime Communications
  - Types of communication
  - Station types
  - Frequency
  - Radio Propagation
  - Modulation
  - Frequency allocation
  - Satellite communications
  - GMDSS requirements
3. GMDSS Communication Systems
  - DSC
  - Call format, priority and categories
  - NBDP
  - Inmarsat
  - EGC receiver
  - Ship station equipment
  - Survival craft radio equipment
  - Fault finding and rectification
4. Additional GMDSS Equipment
  - MSI services
  - NAVTEX
  - SafetyNET system
5. Distress Alerting
  - SAR operation
  - GMDSS terrestrial distress, urgency and safety procedures
  - GMDSS satellite distress, urgency and safety communication procedures
  - Distress frequencies and false alerts

## 6. Operational Procedures for General Communications

- Written and spoken English for communication relevant to safety of life at sea
- Documentation and publication procedures and practices
- General communication procedures

**Learning Outcomes:** On completion of this course the learner will be able to:

**Learning Outcome 1** **State the background and purpose of the GMDSS and its certification requirements.**

Assessment Criteria

1.1 State the background and purpose of the GMDSS.

1.2 State certification requirements.

Conditions and Method of assessment

As specified in the Assessment Strategy listed at the end of this outline and by a combination of:

- Written assessment
- Oral assessment
- Assignments

**Learning Outcome 2** **Describe the principles of Maritime Radio Communications.**

Assessment criteria

2.1 Describe the principles and basic features of the maritime mobile service.

2.2 Describe the principles and basic features of the maritime mobile satellite service.

2.3 Describe GMDSS

Conditions and Method of assessment

As specified in the Assessment Strategy listed at the end of this outline and by a combination of:

- Written assessment
- Practical assessment.
- Assignments
- Oral assessment

<b>Learning Outcome 3</b>	<b>Describe GMDSS communication systems.</b>
Assessment criteria	<ul style="list-style-type: none"> <li>3.1 Describe the purpose and use of DSC.</li> <li>3.2 Describe and demonstrate NBDP systems.</li> <li>3.3 Describe and use the Inmarsat systems.</li> <li>3.4 Describe and demonstrate the purpose and use of ship station equipment.</li> <li>3.5 Perform location and rectification on marine electronic equipment.</li> </ul>
Conditions and Method of assessment	<p>As specified in the Assessment Strategy listed at the end of this outline and by a combination of:</p> <ul style="list-style-type: none"> <li>• Written assessment</li> <li>• Practical assessment.</li> <li>• Assignments</li> <li>• Oral assessment</li> </ul>
<b>Learning Outcome 4</b>	<b>Describe other GMDSS equipment</b>
Conditions and Method of assessment	<ul style="list-style-type: none"> <li>4.1 Describe the purpose and use of MSI services</li> <li>4.2 Describe MSI services available and methods of transmission</li> <li>4.3 Describe the operation and use of the NAVTEX system</li> <li>4.4 Describe the operation and use of the international SafetyNET system</li> </ul> <p>As specified in the Assessment Strategy listed at the end of this outline and by a combination of:</p> <ul style="list-style-type: none"> <li>• Written assessment</li> <li>• Practical assessment.</li> <li>• Assignments</li> <li>• Oral assessment</li> </ul>
<b>Learning Outcome 5</b>	<b>Describe and demonstrate various distress alerting systems.</b>
	<ul style="list-style-type: none"> <li>5.1 Describe the role of RCC and SAR units and reporting systems</li> <li>5.2 For GMDSS terrestrial distress, urgency and safety procedures: <ul style="list-style-type: none"> <li>• Describe and demonstrate distress communication and DSC alerts</li> </ul> </li> </ul>

- Describe urgency and safety communications
  - Describe radiotelephony procedures for distress, urgency and safety communications
- 5.3 For GMDSS satellite distress, urgency and safety communication procedures:
- Describe the Inmarsat A/B ship earth station alerting functions
  - Describe and demonstrate Inmarsat-C ship earth station alerting functions
- 5.4 Describe distress frequency protection and avoidance of false distress alerts

Conditions and  
Method of assessment

As specified in the Assessment Strategy listed at the end of this outline and by a combination of:

- Written assessment
- Practical assessment.
- Assignments
- Oral assessment

### Learning Outcome 6

#### **Describe the miscellaneous skills and operational procedures for general communications**

- 6.1 Use the English language, written and spoken, for the exchange of communications relevant to the safety of life at sea and keyboard skills:
- Ability to use a standard computer keyboard for data entry at a speed of 10 words a minute at 98% accuracy.
  - Explain the use of the IMO Standard Marine Communication Phrases and the International Code of Signals
  - State recognised standard abbreviations and commonly used service codes
  - Describe the use of the International Phonetic Alphabet
- 6.2 Explain the obligatory procedures and practices for
- Documents and publications
  - Radio record keeping

- The regulations and agreements governing the maritime mobile and mobile-satellite services.
- 6.3 Demonstrate a practical and theoretical knowledge of general communication procedures by:
- Describing the use of documentation to receive traffic lists and meteorological information
  - Describing the procedure for radiotelephone calls
  - Describe the methods of charging

Conditions and  
Method of assessment

As specified in the Assessment Strategy listed at the end of this outline and by a combination of:

- Written assessment
- Practical assessment.
- Assignments
- Oral assessment

### **Required Resources**

#### **Access to:**

1. A GMDSS training facility that has examples of GMDSS equipment located on board merchant vessels.
2. AMSA, 1997, *Australian Global Maritime Distress and Safety System (GMDSS) Handbook*, AGPS, Canberra.
3. Video 'Alive via Satellite' (AMSA)

### **Assessment Strategy**

- Ensure the assessments reflect the assessment criteria for the given learning outcome.
- A combination of written and practical assessment tasks can be used to assess a given assessment criterion.
- Each written and practical assessment task can assess more than one assessment criterion.
- Assessment areas must comply with the current national Workplace Health and Safety Regulations.

- Supervision will be required whenever practical assessments are carried out.

Condition of Assessment

Assessment may be undertaken on or off-the-job, however, where possible the off-the-job environment will simulate a real work place situation.

Methods of Assessment

This course may be assessed on and off-the-job. Competence may be assessed in the following situations: classroom; laboratories; and appropriate vessels. Knowledge based criteria will be satisfied through a combination of practical and oral assessments. Skill based criteria will be satisfied through practical exercises.

**Evaluation:**

Final Grade for this course will be based on meeting the course requirements at the following percentage rates:

96% - 100%	A – Superior
90% - 95%	B – Above Average
80% - 89%	C – Average
69% - 79%	D – Below Average
0 % - 69%	F – Failure

**Attendance:**

The COM-FSM attendance policy will apply.