

# M.E.T in Mokpo Maritime University based on STCW Convention

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## 1. Introduction

In recent years, ship operation has rapidly achieved big change in such technological fields as energy saving, labor saving and high reliability. This trend is along with economical conditions and the developments in new technology such as computer, new materials and space technology. Highly sophisticated equipment such as modern communication, integrated navigation system, monitoring and control system etc. have greatly contributed to the complexity of ship operation. In the light of this increasing use of advanced technology, the education and training of ship's officer need more efficient MET program, new applicants in higher admission standards and also the convention of STCW is one of the countermeasures to meet safe operation of the ships in changing maritime environment.

On the other hand, seafarer as a job has been losing its attraction as economic and living standards growing. Thus more or less it is the common problem for the maritime universities to attract good applicants to the institution.

In these days, the topics of MET institutions are

- to establish new educational program with highly efficient teaching tools as per the needs of maritime industry and international standards.

- to show a vision to applicants in MET with career developing program giving flexibility in job opportunity based on advanced high technologies of ship.

If the training scheme is well designed in this respect, it might give poor results for ship owners since it effectively prevents graduates entering the industry as seafarers and thus downgrades marine profession. But it would contribute to induce good students to join in MET. This point of views might be arguing topic between shipping industry and maritime university.

In this respect I would like to introduce MET program in MMU for

deepening mutual understanding through the exchanging of educational informations.

## **2. Introduction of the faculty of Maritime Transportation System in MMU**

### **A. Educational goal**

The faculty of Maritime Transportation System provides academic instruction and practical training programs for professionals in shipping industry.

There have been rapid change in shipboard operations, improved management information systems, computer technology and satellite communications, and growing concerns about marine safety and marine environment protection.

A principal objective of the faculty is to aid students in advancing their skills and knowledge to comply with internationally accepted standard of training for masters and navigational officers as per STCW convention.

The faculty offers one mandatory core course of Dept. of nautical science and five optional course as below;

- Dept. of ship operation system
- Dept. of maritime safety administration
- Dept. of maritime information & computer science
- Dept. of international logistic system.
- Dept. of marine police

### **B. Outlines of 4 departments**

It is commonly agreed today that MET has to serve several purposes. Undoubtedly the qualification for ship services stands in the first place, but close after this comes the requirement to provide a profound basis for shore based careers within the shipping industry.

The fundamental objective of faculty is to expose cadets for a long-term rewarding career by paying greater attention to the development of scientific orientation which includes;

a) the development of cadets' understanding and application of marine engineering and nautical science principles required in the future maritime

industry

b) the development of the cadets' ability to carry out management functions and take decisions based on sound engineering judgement.

These professional aims should be embedded into efforts to promote human qualities and abilities. The background of 5 educational schemes intends to give job opportunity and flexibility for cadets in career development and to lower the barrier between the professionals in sea service and shore.

The outlines of educational schemes in each departments are as below.

1). Dept. of Nautical Science

Students entering the faculty of Maritime Transportation System must mandatorily enroll in the department of nautical science. The objective of the department is to aid students in advancing their skills and knowledge to comply with internationally accepted standard of training, "The International Convention on Standards of Training, Certification and watch keeping for seafarers, 1978, as Amended in 1995".

It provides instructions and training in the fields of navigation, cargo handling & stowage, and controlling the operation of the ship and care for persons on board and radio communication.

2). Dept. of Ship Operation System

The objective of the Dept. of Ship Operation System is to provide expert knowledge for the ship navigation, extensive knowledge about machinery and radio communication systems necessary for the operation of an automated vessel. This department offers students, who wish to obtain a alternative certificate, necessary instructions and training program.

3). Dept. of Maritime Safety Administration

In the 21st century, new international systems will dominate maritime circumstances. To actively meet this new situation, the Dept. of Maritime Safety Administration provides profound knowledge concerning the management of marine safety for the purpose of preventing marine pollution and operating ships

safely.

4). Dept. of Maritime information & Computer Science

The department provides instructions in specialized subjects concerning computerization of information and computer operations to aid students in advancing their knowledge, which is necessary for information expert to manage transportation system in international marine trade.

5). Dept. of International Logistics System

In these days, combined transportation is the most popular type of international cargo flows and the importance of logistics is recognized.

This department is to instruct students in the subject of logistic systems and to systematically manage diversified international cargo transportation systems and also aims to produce students who can adapt to the industries of international trade, marine insurance, and shipping.

6) Dept. of Marine police

### **3. Curriculum of the faculty of Maritime Transportation System**

A>. The course for nautical science dept. based on STCW '95 in charge of officers in charge of a navigational watch, chief mate and master as below;

B> structure of educational scheme and credits

As mentioned above, the faculty are composed of 5 departments and students must enroll in department of nautical science and one another additional department selectively, so called dual major system.

Credits of each scheme are as followings;

<table 1 > curriculum of nautical science

School year	Semester	Subject	Remark
First year	Spring semester	Maritime rules and regulations, Training of safety at sea, Maritime safety and emergency procedure, Ship structure and ship maintenance, Ship electrical engineering, Reading in English	
	Fall semester	Navigation I (terrestrial and coastal navigation), Navigational instruments, Marine pollution prevention Law, Radio communication engineering, Radio communication practice, English conversation, Introduction to foreign trade, International law	
Second year	Spring semester	Navigation II (celestial navigation), Navigation III (radio navigation), IMO standard marine navigational vocabulary, Ship manoeuvring and handling, Cargo stowage and ship stability, Safety at sea, Management of physical distribution, Marine environment	
	Fall semester	Watchkeeping, Radar navigation, Maritime search and rescue, Maritime English, Tanker operation, Maritime conventions, Prevention and control of maritime pollution, Safety management, Organization management, Multimodal transportation, Practical business of trade, Ship chartering	
Junior year	Spring semester	On-board deck training I	To be confirmed by training record book
	Fall semester	On-board deck training II	To be confirmed by training record book
Fourth year	Spring semester	Prevention of maritime casualty, Trading English, Maritime communications practice, Operation of special cargo carrier (LPG, LNG, Chemical product carrier), Port state control practice, Marine meteorology, Ship power plant, Practical business of shipping, Shipping management, Maritime insurance, International logistics system,	
	Fall semester	Training of ship handling simulator, Ship medical aid, Maritime rules and regulations, Ship automation, Maritime traffic management, Marine ecology, Maritime commercial law	

<Table 2 > credits of educational scheme

	common science	1st major (Nautical science)	Onboard training	2nd major (selective)
compulsory	31	68	15	20
optional	22	13	15	35
total	53	81	30	55

- \* 1 credit is a unit for 15 hours of lecture.
- \* students must get more than 150 credits before graduation.
- \* subjects in nautical science are designed to be completed before onboard training.

#### 4. Onboard Training

Traditionally in the MET program, the emphasis is laid on the practical onboard training to prepare them for the job and to fit them to the shipboard life. Though MET have been carried out in various ways according to each country's tradition and educational system, generally it is done by combined way of school education and onboard training which is also mandatory for certification as ship's officer in STCW convention. Onboard training is to develop practical competence as ship's officer but the type of training is various as per each tradition and educational system.

Type of onboard training can be divided into 4 cases as below;

##### A> Time for training

- \* Multi-divisional scheme

Onboard training is divided into several parts which are spread over total MET program.

Each part of onboard training can be designed for the given goal like pre-sea training etc. but this case might be inconvenient in program operation for university.

Most of European countries, Japan, America adopt this type.

- \* Continuous scheme

Onboard training is continued for one year. Training program is integrated and maintained intensively. Program operation is relatively easy but it might be heavy burden for cadets to be onboard 1 year continuously. Korea, Netherlands adopt this type.

**B> Place for training**

**\* Training ship**

accommodate cadets into training ship and lectures supervise and train cadet as per the program. General standards of training can be achieved all over the cadets but sense of shipping business might be loose.

**\* Supervised sea experience in shipping company**

Under the cooperation with shipping company, university send cadets to shipping company as apprentice officer. Ship's staffs supervise the training as per the training program and training record book. Achievements of training might be vary as per the circumstances on board but efficient to develop the sense of shipping business.

Onboard training in MMU is carried out at junior year, for six months on training ship and another 6 months on ship of shipping company alternately.

In this system, the time needed to understand ship's operation and to be capable of navigational watch properly was checked by questionnaire for 109 cadets as below.

**<Table 3 > time needed to be capable of navigational watch**

Time	4 months	6 months	8 months	10 months	no answer
Ratio(%)	46.8	37.6	5.5	4.6	5.5

This result shows that the most of cadets need about 6 months of sea experience to be capable of navigational watch and the rest of the time is used for repeating practices.

## 5. Training of maritime lectures/personnel

As per the advancing technology, demand for training of cadets in this trend also call for retraining of maritime lecturers. The updating of their knowledge should reflect the area of specialization and be geared towards the new requirements.

Under the cooperation with shipping company, MMU is offering re-freshening program for lectures joining to ship in short-term.

## 6. Conclusion

The high technical complexity of ship equipment demands well-educated officers and it is foreseen that the qualification requirements for seafarers will continue to increase in the coming years. On the other hand, it is today an accepted fact that most seafarers look at shipboard service as a temporary employment for some or several years.

To cope with high technology of ship and professional mobility, syllabi of MET contain subject as economics, management and computer science which are not only useful for shipboard application but also for working in the shore-based maritime industry. There could be an arguments if curriculum of maritime university are enough to meet both of the requirements in STCW and shoreside maritime industry within given school years. Undoubtedly the utmost goal of maritime university should be placed on the education of qualified ship's officer but efforts to provide professional mobility also should be made. As introduced MMU has been carrying out dual-majoring system and so far it seems successful. As we see, requirements in STCW'95 are to raise up the standard of MET and there cannot be any objection. But there can be some careful variation to give space for shore-based subjects, under the condition that it maintains standards of the seafarers' qualification. And for this, rationalization of MET program, modernized training facilities like simulators, well trained lectures should be followed.



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