

# A New Educational System of Maritime Science in 21<sup>st</sup> Century proposed by Kobe University of Mercantile Marine

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## Abstract

Kobe University of Mercantile Marine (KUMM) is going to be integrated next year as one faculty of Kobe University, one of the representative large-scaled national universities in Japan. KUMM regards the integration as the most important and crucial moment to realize *VISION 21* projects. The outline of *VISION 21* was introduced two years ago at the Inaugural General Assembly of IAMU in Istanbul, where the emphasis was placed on the new curriculum and educational system for undergraduate students. The new curriculum has been working well since April 1, 2001, and has been given a good reputation from KUMM staffs and students. KUMM now intends to make further progress with the integration.

In this paper, the outline of KUMM strategy concerning the integration is introduced, i.e., how the concepts of *VISION 21* is to be realized. First of all, the organization of a new maritime faculty, Faculty of Maritime Science, is briefly explained including its graduate school. When integrated with Kobe University, an epoch-making educational system is planned. That is, the students studying in Faculty of Maritime Science can attend the lectures provided by the other faculties such as Law, Economics, Business Administration, Science and Engineering, etc. It is expected that those distinctive educational systems significantly enhance the education quality of Faculty of Maritime Science. Incidentally, KUMM is also asked to provide some sea-oriented subjects for students studying in other faculties.

KUMM strongly hopes to be *the center of excellence* of maritime science and related areas through the integration, both domestically and internationally. This paper also aims at providing the information of a new educational trend of maritime science in Japan.

## 1. Introduction

Kobe University of Mercantile Marine (KUMM) is to be integrated with Kobe University (KU) on October 1, 2003. The integration was approved in December, 2000 between KUMM and KU. The integration plan was signed in July, 2001. Since then, intensive meetings have repeatedly been held in order to make the integration as the threshold of a new maritime education in Japan.

In this paper, it is shown how the *VISION 21* projects are to be realized through the integration. KUMM is to join KU as one faculty.

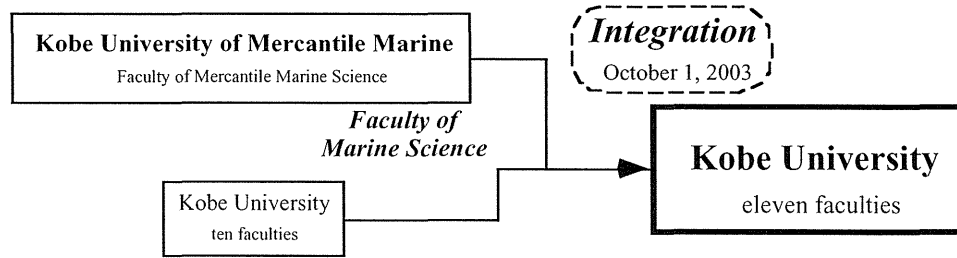


Fig.1 Integration of KUMM and Kobe University

## 2. Objectives and Ideology of the Integration

### 2.1 Why Integration?

All national universities in Japan have been put into severe situations since June in 2001. The Ministry of Education declared the future plans of the universities as follows.

1) *Integration Program:*

Integration should be promoted positively even between universities located in different prefectures.

2) *COE Program:*

For selected ten research fields, thirty divisions of graduate schools with Ph.D. course are to be selected according to their projects toward 21st century and the achievements so far. Governmental budgets are intensively supplied to those divisions.

3) *Introduction of Agency System:*

Each university should make efforts as an independent agency from the financial point of view.

The Ministry of Education intends to activate the research activities and enhance the education quality of ninety-nine national universities by the integration among them. The integration program is now fiercely being progressed. Before the end of this year, two sets of national universities are scheduled to be integrated.

### 2.2 What s the purpose of our Integration?

KUMM regards the integration as a great opportunity to incorporate the educational resource possessed by Kobe University (KU) into the fields of maritime science. That is, the integration has high possibility to open a new field for the conventional concepts of maritime science. By the integration, new Kobe University makes a fresh start as the first large-scaled university in Japan with maritime faculty in it and being open to the sea. It may exploit new research fields by combining the scientific principle of maritime science with those of engineering, science and social science.

### 2.3 Advantages and Disadvantages brought by the Integration

*Advantages:* From the education and research point of view, the integration brings KUMM a great deal of advantages. As for education, maritime science students are offered a opportunity to learn a variety of educational programs on cross-cultural studies in the first and second years. In addition, in the third and fourth years, the

students can attend the lectures of the other faculties, i.e., science, engineering and social science. The discipline of maritime science is fundamentally supported by science and technology and is also closely related to social science. Figure 2 shows the subject exchange program between Faculty of Maritime Science and other faculties. It s a great opportunity for the students to understand maritime science more extensively and learn different approaches toward the goal. Research activities of Faculty of Maritime Science shall certainly be activated, e.g., in the form of joint research with the staffs working in the other faculties.

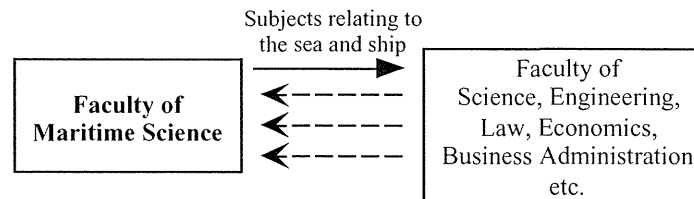


Figure 2 Subject exchange program among faculties

As already stated in the previous paper [1], many universities in Japan are facing a serious problem of decreasing applicants because the number of young people is continuously decreasing. However, it is expected that KUMM can acquire students constantly owing to the integration, since KU has high reputations as one of the representative national universities. In coming 2009, the number of applicants is to be equal to the total admission capacity of universities and other high education institutes, which means that every applicant apparently can enter a certain university. Actually, some universities have already been confronted with the severe situation. More and more universities will be troubled in acquiring students. That situation can hopefully be avoided in the case of KUMM by the integration.

*Disadvantages:* On the other hand, there are a couple of disadvantages brought by the integration. First of all, the decisions made by the maritime faculty on such problems concerning education, research an administration, might not be approved by the board members of Kobe University. For example, the distinctive educational system of KUMM seems disturbed, to some extent, especially on the introductory education for freshmen and sophomore concerning the sea and ship-training subjects. That is because of the rigid school calendar of KU to which every faculty has to follow. Budget problems may be more serious since the total budget supplied to KU is distributed to each faculty following the decision made by the board members.

As a whole, however, *KUMM predicts that the advantages by the integration will by far surpass the disadvantages* , and the integration will be the starting point of KUMM to be really the COE of maritime science.

### 3. Outline of a New Maritime Faculty

#### 3.1 Outline of Kobe University

Kobe University (KU) is one of the representative large-scaled national universities in Japan and acquires a good reputation both in education and research. The total number of undergraduate students is approximately 12,000

which is more than ten times that of KUMM. KU has ten faculties as follows.

*Faculties:*

Letters, Cross-Cultural Studies, Human Development, Law, Economics, Business Administration, Science, School of Medicine, Engineering, Agriculture

As for graduate school, at the moment of the integration, Faculty of Maritime Science joins Graduate School of Science and Technology, which already exists and accepts many students graduated from three faculties of science, engineering and agriculture. These faculties are closely related to maritime science in many respects.

**3.2 Organization and Outline of Undergraduate Course**

Faculty of Maritime Science consists of three departments. Namely, four departments now composing KUMM is reorganized into three departments as shown in Table 1.

Table 1 Three departments of Faculty of Maritime Science

**Kobe University, Faculty of Maritime Science**

<i>Department</i>	<i>admission</i>
Maritime Technology Management	70
Maritime Transportation Systems	60
Marine Engineering	70
	Total 200

The total admission capacity is unchanged. Students who want to be seafarers or experience ship-training with large training ships are to choose Maritime Technology Management.

**3.3 Organization of Graduate Course**

Divisions of master and Ph.D. courses relevant to maritime science belong to Graduate School of Science and Technology. The graduate school consists of nineteen divisions for master program and ten divisions for Ph.D. program in all.

Master Program

Three divisions on maritime science are prepared for master program, which correspond to the three departments of the undergraduate program, respectively. Figures indicate the admission capacity of each division.

*Divisions:*

Maritime Technology Management (12), Maritime Transportation Systems (16), Marine Engineering (16)

Ph.D. Program

Division of Maritime Science is in charge of Ph.D. program concerned. The admission capacity is 11 students. Incidentally, it is predicted that some students graduated from Faculty of Maritime Science proceed to the other divisions of Graduate School of Science and Technology.

#### 4. Education System of Faculty of Maritime Science

##### 4.1 Admission

Two hundreds students are selected without their department being appointed at the enrollment. In one and half year later, each student chooses his or her department. The determination is made on the basis of the credits that the students acquire after the enrollment and the score of entrance examination. KUMM intention is to provide a chance for students to choose the department after they learn the fundamentals of maritime science. Currently in KUMM, students must determine the department prior to the enrollment. This system sometimes causes troubles such that some students feel, so to speak, a department mismatch. The system of designating the department in one and half year later might expectantly solve those kinds of problems. Consequently, students can learn what and in which they really want to learn.

##### 4.2 Departmental Undergraduate Degree Programs

Each department prepares two or three groups of subjects in connection with its specialized field. They are tabulated in Table 2.

Table 2 Groups of special subjects for each department

<i>Department</i>	<i>Groups of Special Subjects</i>
<b>Maritime Technology Management</b>	1. Navigation 2. Ship Engineering 3. Maritime Safety & Technology Management
<b>Maritime Transportation Systems</b>	1. Logistics 2. Intelligent Transportation
<b>Marine Engineering</b>	1. Marine Mechatronics 2. Energy & Ecology

Ship-training with large ships is usually for Department of Maritime Technology Management. However, KUMM is making an effort so that it comes to be available for students studying in other departments.

##### 4.3 Ship-Training & Maritime Officer s Certificate

Students who want to be seafarers or experience ship-training with large training ships are to learn in Department of Maritime Technology Management. Two groups of special subjects, Navigation and Ship Engineering shown in Table 2, are for seafarers certificate, respectively, each of which corresponds to the minimum value of 35 credits and exactly coincides with the minimum requirement specified in Japan law.

## 5. Strategies to be a New Center of Excellence of Maritime Science

KUMM has a couple of ambitions to be realized by the integration with Kobe University.

They are summarized as follows;

### 1) *Establishment of "Technology Management"- New Concept in Maritime Science* —

Beside the subjects relating to seafarers certificate, as explained in the previous section, a variety of subjects on technology management are prepared in order to bring up maritime engineers having the knowledge on management. They can cope with a new trend of maritime business appearing in the very near future.

### 2) *Harmonization of Maritime Science with Science, Engineering and Social Science*

By combining various disciplines in the different fields, a new concept could be produced in maritime science. Needless to say, maritime science has been greatly supported by the discipline of science and technology. After the integration, powerful support can be expected from social science, since Kobe University has faculties with high reputation in the fields of social science such as Law, Economics, Business Administration.

### 3) *Maritime Engineers with Multi-background*

It is predicted that some students graduated from Faculty of Maritime Science proceed to the master or Ph.D. courses of the other fields, e.g., engineering, science, law, economics and business administration. That means the advent of maritime engineers with multi-background. It is expected they will play an important role and create a new field in the maritime society.

## 6. Conclusions

Kobe University of Mercantile Marine now steps forward to the COE of maritime science. The integration with Kobe University is one of the concrete plans to achieve *VISION 21* projects and will be the threshold of the new types of education and research activities in maritime science. The results of *VISION 21* projects will be evaluated in the near future by the maritime society in Japan.

### References

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