

# The Exchange Program of International Class for Maritime Studies (2019)

1. Four majors open for application:

✧ **Marine Transportation (in Navigation Technology)**

[Lectures will be related with but not limited to: Navigation instrument, Ship maneuvering, Marine Signals and Radiotelephony, Shipping business, GMDSS, Ship management and etc.]

✧ **International Maritime Business**

[Lectures will be related with but not limited to: Port Terminal Operations Management, Supply Chain Management and Transport Industry, Business Law, E Commerce, Marketing, and etc.]

✧ **Marine Safety and Environmental Protection**

[Lectures will be related with but not limited to: Environmental Chemistry, Oceanography, Marine Resource Management, Hazardous Materials Management, Principles of Environmental Engineering, and etc.]

✧ **Marine Engineering**

[Lectures will be related with but not limited to: Thermodynamics, Fluid mechanics, Electronics (Theory), Electronics (Lab), and etc.]

2. Program features:

- ✧ Tuition-free
- ✧ Full-English lectures for international students;
- ✧ On-campus accommodation;
- ✧ Opportunities to experience Chinese culture and visit famous historical spots will be provided;

3. Program Duration: **March 4<sup>th</sup>-May 31<sup>st</sup>, 2019/ totally 13 weeks**

4. Student Registration date: **March 1<sup>st</sup>- 3<sup>rd</sup>, 2019**

5. Application requirement:
- ✧ Undergraduate students in the 2<sup>nd</sup> or 3<sup>rd</sup> year of study in maritime-related universities/colleges;
  - ✧ Have similar academic background in one of the four above-mentioned majors;
  - ✧ Approved by your home university for studying abroad for 13 weeks;
6. Required documents from candidates:
- ✧ Application Form for International Students at Shanghai Maritime University (Please print the required information.)
  - ✧ Latest transcript in your current university / college
  - ✧ Photocopy of valid passport
  - ✧ Passport-size photo (digital and printed)

Note: Those documents should be prepared, scanned, and send photocopy to the following email address first, and then delivered to the SMU Lingang Campus.

**Deadline for application: November 30<sup>th</sup>, 2018.**

7. Fees

- ✧ Tuition: free
- ✧ Accommodation: international students dormitory; double room;  
Rent fee: CNY 600yuan / month, or CNY 1200yuan /month. (Depending on room type)
- ✧ Insurance: CNY 400yuan / person. (required insurance for each student)

➤ ***SMU Campus***

临港校区地址：上海市临港新城海港大道 1550 号  
Lingang Campus Add: 1550, Haigang Avenue, New Harbor  
City, Shanghai, China  
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## ***Appendix: Course Introduction of Exchange Program of International Class for Maritime Studies***

### **Schedule for International Maritime Business Class (IMB)**

Course	Credits	Hours
Port Terminal Operations Management	3	54
Supply Chain Management and Transport Industry in China	3	54
Marketing	3	54
Chinese History and Chinese Culture	1.5	27
Maritime Economics	3	54
General Mandarin	1.5	27

- **Port Terminal Operations Management**

Presently container terminal planning, design and management are important elements for specialized terminal operators as well as for major liner shipping companies. With privatization and globalization taking place in the container terminal business in many countries, both opportunities and changes have arisen and competition intensified. The aim of this subject is to provide the student with the fundamental elements of modern container terminal design, planning and management through practical examples, cases studies and exercises. Land use, equipment choice, personnel planning, leasing and pricing options are integrated into the overall design and planning model taking into consideration the market and technological changes. Discussions are held concerning the managerial aspects of a container terminal in achieving the highest possible efficiency and productivity.

- **Supply Chain Management and Transport Industry in China**

This subject covers supply chain management and transport industry in China. Supply chain management is a set of approaches utilized to efficiently integrate suppliers, manufacturers, warehouses, and stores, so that merchandise is produced and distributed at the right quantities, to the right locations, and at the right time, in order to minimize system wide costs while satisfying service level requirements. Moreover, transport industry in China has developed rapidly in the last few years and its characteristics and trends are different from those in any other countries. This course includes many classic and new case studies, numerous examples as well as in-depth analyses of some of the technical issues involved in strategic partnering, inventory management and logistics network configuration and etc. in supply chain management, as well as a broad overview of logistics industry, port industry, shipping industry and Shanghai international center in China.

- Maritime Economics

This subject concentrates on the application of economic principles to the maritime transport sector. Economic explanations and analyses are given to the students regarding the new characteristics of modern maritime transport. A comprehensive economic review is given on all major aspects of shipping, ports, and other related sectors from both demand and supply. Discussions will focus on the key issues of maritime transport, such as the impact of economic development and trade on maritime transport, influential factors on ship demand and supply, the role of maritime transport auxiliaries and shipping cost analyses. It is expected that by the end of the course, students should have an in-depth understanding of maritime economics and be able to use economic tools to analyze the shipping market and to enhance the quality of decision making in maritime related sectors. Besides explaining economic theories, the delivery of the subject will consist of discussions concerning commercial, documentary and legal issues from current maritime transport practices.

- Marketing

The marketing management is to examine the decision areas surrounding the marketing mix (product/services, distribution, advertising, pricing etc.) in an organization, given its goals and constraints and the demand of market segments. The participants will be required to analyze "real" marketing problems by examining cases, theories and techniques in an eclectic manner. The participants will gain a sound appreciation of the core concepts and techniques of marketing management.

#### Schedule for Marine Transportation Class (MT)

Course	Credits	Hours
Containerization and Modern Cargo Stowage	3	54
Marine Meteorology	3	54
Stability and Trim	2	36
Chinese History and Chinese Culture	1.5	27
General Mandarin	1.5	27

- Marine Meteorology

This course mainly focuses on the understanding of the basic theories and concepts, and the demonstrating the proper use of weather information in planning and adapting navigation during local and passage-making voyages. It is also our goal to demonstrate students' ability to make analysis of weather maps and ocean conditions by using both the latest technological tools as well as traditional maritime skills.

1. basic concepts
  - (1) atmosphere
  - (2) temperature
  - (3) moisture
  - (4) wind
  - (5) atmospheric circulations
  - (6) vertical motions and stability of atmosphere
  - (7) clouds and precipitation
  - (8) fog and visibility
  - (9) ocean currents, waves and sea ice
2. weather systems
  - (1) air masses and fronts
  - (2) frontal cyclones
  - (3) subtropical high
  - (4) tropical cyclones
  - (5) hurricane avoidance
3. weather charts
  - (1) upper air charts
  - (2) surface charts
  - (3) synoptic analysis
4. Weather satellites / weather routing

- Stability and Trim

This course includes the course includes the Stability, Trim, Bouyancies, Movement of the Center of Gravity, Causes of List, Fresh Water Allowance, Initial Stability, Statical Stability, Angle of Loll, Effect of Slack Tank, Action to be Taken in the Event of Partial Loss of Intact Stability, Maintain Seaworthiness of the Ship.

The class hours shall be divided into two parts, lecture period and laboratory period.

The student shall learn how to use table on diagrams of stability and trim data to calculate ships' initial stability, draught and trim for any given disposition of cargo and other weights. Moreover, they will be able to determine whether stresses on the ships are within tolerance by the use of stress data and take actions in the event of partial loss of intact buoyancy.

- Containerization and Modern Cargo Stowage

The course covers the information, knowledge and use of practical skills necessary for a junior deck officer to stand an effective cargo watch on board a variety of modern dry cargo vessel types. Load planning, preparation of holds, operation of ships' cargo gear, and the importance of adequately securing cargo to prevent damage to the ship or cargo are covered. Detailed materials on cargo containers including proper handling of refrigerated cargo containers are included.

Proper stowage and segregation of hazardous cargo and the IMDG Code are addressed. Dry bulk cargo stowage including the associated hazards and precautions needed for safe loading and unloading is introduced.

### Schedule for Marine Engineering (ME)

Course	Credits	Hours
Engineering Thermodynamics	3	54
Fluid Mechanics	3	54
Electronics (Theory)	3	54
Electronics (Lab)	1	18
Chinese History and Chinese Culture	1.5	27
General Mandarin	1.5	27

- Engineering Thermodynamics

This course covers the application of the basic laws of thermodynamics to open and closed systems including refrigeration, air conditioning, and various power cycles with special emphasis on the gas power cycles and steam power cycle.

- Fluid mechanics

Engineering Fluid Mechanics is the science of the law of equilibrium and motion of fluids, which include gases and liquids. It is an important basic technical course stretching across various fields and specialties. Knowledge of fluid mechanics is required in various fields such as energy, power, environment, industry, chemistry, building, aviation and national defense, etc. Students of Marine Engineering specialty need the knowledge of fluid mechanics in Engineering design or other technical work. This course provides students with basic concepts, basic theories and experimental techniques of fluid mechanics needed in future study or work.

- Electronics (Theory)

Electronics provides a broad overview of the modern electronics used by the marine and power industries for automation, system monitoring and control. The course gives the foundations of both analog and digital circuits. The objectives of this course are:

- (1) Understand the relationship of component blocks and signals in electronic systems;
- (2) Define primary circuits and components used for analog signals and conditioning;
- (3) Define primary circuits and components used for digital signals and conditioning;
- (4) Read analog and digital circuit diagrams, and identify basic electronic components;
- (5) Understand the use of solid-state devices for amplification and switching applications;
- (6) Read and understand PLC and ladder logic circuits used in discrete-state applications.

- Electronics (Lab)

This laboratory supports the Electronics course. Participants learn to use electronic instruments by taking measurements on analog and digital circuits constructed during the lab period. The measurements are then used to verify the analytical relationships developed in the classroom.

### Schedule for Marine Safety and Environmental Protection Class (MSEP)

Course	Credits	Hours
Environmental Chemistry	4	72
Oceanography	4	72
Marine Resource Management	3	54
Hazardous Materials Management	3	54
Principles of Environmental Engineering	3	54
Chinese History and Culture	1.5	27
General Mandarin	1.5	27

- Environmental Chemistry

This course is designed for undergraduate students on environmental engineering to study the inorganic and organic chemical principles that relate to an understanding of our nonliving and living environment. Emphasis is placed on the interdependence of these natural processes. Issues relating to the disruption of these systems, mode of action, and mechanisms of removal of specific pollutants are among the topic discussed.

The course comprises of a decade of chapters. The main discussing topics including the followings: earth, water analysis, water resources, water pollution & treatment, inorganic metals, organic chemicals, insecticides & herbicides, toxicology, dangerous waste disposals, earth's atmosphere, and troposphere & stratosphere.

- Oceanography

This course will investigate the global ocean based on the latest in marine science and technology. Also, this course will study fundamental principles in geological, physical, chemical and biological oceanography. Moreover, this course will delve into the formation of the ocean basins, the properties of seawater, surface and deep global ocean circulation, life in the ocean and biological productivity in the ocean.

- Marine Resource Management

This course mainly includes the following contents: (1) General introduction (2) Classification and distribution of Marine resources; (3) Relative laws and policies; (4) Exploitation of marine

resources; (5) Protection of marine resources.

After studying the course, students can master the international jurisdictions, public trust rights in the offshore environment, coastal zone management, emerging energy uses in the offshore environment and the exploitation of traditional resources. Specific subjects such as marine pollution, wetlands protection, marine mammal conservation, endangered species, and the impact of climate change on ocean environment will be cleared. These will help students to make decisions and avoid risks in the future study or work

- Hazardous Materials Management

Daily, hundreds of thousands of dangerous materials are used, generated and moved within world-wide commerce. Tragic events involving mismanagement of hazardous materials have prompted a significant outpouring of legal actions worldwide, and most importantly the need for knowledge and education in this endeavor.

Hence, this course will focus on hazardous materials through the study of management techniques, law and policy, and scientific disciplines. Initially, the course will focus primarily on the definition, classification of hazardous materials, and related chemical fundamentals. The course will subsequently explore the methods that may be used to influence hazardous materials management. Finally, related laws, regulations, policies, new concepts will be explored.

- Principles of Environmental Engineering

This course is mainly focused on the basic knowledge of environmental engineering and the current environmental pollution problems, which contains four parts: Firstly, the basic knowledge about environmental chemistry, biology, and materials and energy balance was offered to help students understand the principle of environmental engineering. Secondly, basic knowledge of hydrology, sustainable energy, water quality management was provided, in which the current major environmental problems will be presented; Thirdly, main water pollutants was put forward, and strategy, technology and their principles applied in water treatment and wastewater treatment was included; Fourthly, main air pollutants, their harm to the environment and human was presented, also the current main air pollution problem was came up with.



## *Brief Introduction of Shanghai Maritime University*



Shanghai Maritime University (SMU) is a multi-discipline university that encompasses such areas as engineering, management, economics, liberal arts and science, with special emphasis on shipping technology, economics and management. Chinese maritime education was originated at Shanghai and grew out of the Shipping Section of Shanghai Industrial College founded in 1909 (towards the end of the Qing Dynasty). SMU was established by the Ministry of Communications in 1959. Since 2000, SMU has been mainly administered by Shanghai Municipality and has been co-constructed by Shanghai Municipality and the Ministry of Transport.

Currently, SMU provides 45 programs leading to a Bachelor's degree, 12 programs leading to an Associate's degree. SMU has been authorized by the State to offer 59 programs leading to a Master's degree and 17 programs leading to a Doctor's degree in all 11 colleges. Currently, SMU has a full-time student population of near 20,000, of whom over 17,000 are studying for a Bachelor's degree and over 3000 for Master's and PhD degrees. For decades of years, SMU is devoted to fostering qualified talents for shipping industry. SMU has provided the shipping enterprises, public institutions and government departments with over 50,000 graduates and is therefore honored as "Cradle of Qualified Shipping Personnel".

Among all the disciplines offered by SMU, "Communications & Transport Planning & Management" is ranked as the state-level key discipline, "Communications & Transport Planning

& Management” and “Industrial Economics” are ranked as the ministry-level key discipline, “International Law (Maritime Law)”, “Logistics Management & Engineering”, “Port Machinery Electronics Engineering”, and “Vehicle Application Engineering” are ranked as Shanghai Municipal level key discipline, and “Marine Engineering”, “Port and Shipping Electric Drive & Control Engineering”, “Machine Design & Theory”, and “Power Electronics & Electric Drive” are ranked as the Shanghai Municipal Education Commission Level Key Disciplines.

SMU has always attached much importance to exchange and cooperation with overseas academies, institutions and industry companies, and has established close ties with the institutions in such countries or regions as U.S.A., the Netherlands, U.K., Japan, Poland, Sweden, Hong Kong China and Chinese Taipei. More and more overseas students are coming to SMU for studies. Currently, various types of programs in SMU are open to international applicants, including Chinese language program (non-degree), university student exchange program (non-degree), undergraduate degree program, postgraduate degree program, PhD program, and some joint degree programs with other foreign universities. In year 2013, there are more than 500 international students from 40 countries or regions studying in different programs in SMU.

The international students in SMU will be provided with not only the very professional discipline teaching, but also numerous opportunities of practicing Chinese language and experiencing Chinese culture. The university will organize specially-designed activities such as Chinese kung-fu (martial arts) teaching, traditional calligraphy classes, visit to Chinese culture experimental bases, tour to famous Chinese scenic spots and historic sites, and etc. International students will no doubt have a great experience when they study here.

At present, there are more than 800 international students from different countries or regions studying in different programs in SMU each year. They register in both non-degree programs, including Chinese language training program and university student exchange program, and degree programs, including bachelor’s program, master’s program and PhD programs.