# Syllabus of Fall Semester(tentative), 2026

| Course Title | Business for Shipping | Course Code | TBA | Section | 001 |
|---|---|---|---|---|---|
| Department | Division of Maritime Business and Economics | Level | 3 | Credit-Theory-Practice | 3-3-0 |
| Class Hours | 14:00 – 17:00 (GMT+9), Friday | | | | |
| Lecturer | Chi Yeol Kim | | | | |
| Methodology of Instruction | Lecture | | | | |
| Evaluation and Grading | Attendance (20%), Discussion Participation (20%), Mid-term Exam (30%), End-term Exam (30%) | | | | |
| Course Description | This course combines theories and practice in corporate financial management and explores how to apply them into the management of shipping, port and logistics companies. | | | | |
| **Textbooks and References** | | | | | |
| Required Textbooks | - The International Handbook of Shipping Finance by Kavussanos·Visvikis (Palgrave Macmillan)<br>- Corporate Finance: Core Principles and Applications, 5th Edition by Ross·Westerfield·Jaffe·Jordan (McGraw Hill) | | | | |
| References | N/A | | | | |

**Weekely Schedule of Classes**

| Week No. | Course Materials | Other Notes |
|---|---|---|
| Week 1 | Economic Contribution of Shipping Industry | |
| Week 2 | Review of Shipping Industry | |
| Week 3 | Overview of Corporate Finance | |
| Week 4 | Financial Statements and Cashflow | |
| Week 5 | Discounted Cashflow | |
| Week 6 | Capital Budgeting | |
| Week 7 | Risk and Return | |
| Week 8 | Asset Pricing | |
| Week 9 | Cost of Capital | |
| Week 10 | Market Efficiency | |
| Week 11 | Capital Structure | |
| Week 12 | Corporate Finance in Shipping Industry | |
| Week 13 | Mergers and Acquisitions | |
| Week 14 | Risk Management (1) | |
| Week 15 | Risk Management (2) | |

| Course Title | Food Science | Course Code | TBA | Section | 001 |
|---|---|---|---|---|---|
| Department | Maritime Biology | Level | 3 | Credit-Theory-Practice | 3-3-0 |
| Class Hours | | | | | |
| Lecturer | Sun-Young LIM | | | | |
| Methodology of Instruction | Lecture | | | | |
| Evaluation and Grading | Attendance (20%), Discussion Participation (20%), Mid-term Exam (30%), End-term Exam (30%) | | | | |
| Course Description | This course address the theory and methods of utilizing food resources (agricultural, livestock, seafood, etc.) effectively by subjecting them to physical, chemical, and microbiological treatments as food ingredients to extend their storage life, increase their nutritional value, and provide taste and convenience, as well as promote disease prevention. | | | | |
| **Textbooks and References** | | | | | |
| Required Textbooks | Digestive biology | | | | |
| References | | | | | |
| **Weekely Schedule of Classes** | | | | | |
| **Week No.** | **Course Materials** | | | **Other Notes** | |
| **Week 1** | Basic principles of food processing and storage | | | | |
| **Week 2** | Factors influencing food processing and storage: moisture, microorganisms, enzymes, oxygen, pH, temperature, light | | | | |
| **Week 3** | Factors influencing food processing and storage: moisture, microorganisms, enzymes, oxygen, pH, temperature, light | | | | |
| **Week 4** | Basic food processing techniques: physical processes, distillation, and extraction | | | | |
| **Week 5** | Principles of food preservation: drying and concentration | | | | |
| **Week 6** | Principles of food preservation: refrigeration and freezing, heat sterilization | | | | |
| **Week 7** | Principles of food preservation: other preservation methods such as osmotic pressure, smoking, irradiation, gas storage, and high-pressure sterilization | | | | |
| **Week 8** | Midterm exam | | | | |
| **Week 9** | Processing and storage of canned and retort foods | | | | |
| **Week 10** | Food packaging | | | | |
| **Week 11** | Processing and storage of grains, cereals, and legumes (presentation) | | | | |
| **Week 12** | Processing and storage of fruits and vegetables (presentation) | | | | |
| **Week 13** | Processing and storage of meat and seafood (presentation) | | | | |
| **Week 14** | Processing and storage of dairy products (presentation) | | | | |
| **Week 15** | End-term examination | | | | |

| Course Title | Micro-biology | Course Code | TBA | Section | 002 |
|---|---|---|---|---|---|
| Department | Maritime Biology | Level | 3 | Credit-Theory-Practice | 3-3-0 |
| Class Hours | | | | | |
| Lecturer | Sun-Young LIM | | | | |
| Methodology of Instruction | Lecture | | | | |
| Evaluation and Grading | Attendance (20%), Discussion Participation (20%), Mid-term Exam (30%), End-term Exam (30%) | | | | |
| Course Description | This subjet is to understand digestion, absorption and metabolism of major energy nutrients (carbohydrate, protein and lipid). In addtion, field lesson related to marine and fishery industries will be executed. | | | | |
| **Textbooks and References** | | | | | |
| Required Textbooks | Food The Chemistry of its Components | | | | |
| References | | | | | |

**Weekely Schedule of Classes**

| Week No. | Course Materials | Other Notes |
|---|---|---|
| Week 1 | Overview | |
| Week 2 | Field trip | |
| Week 3 | Field trip | |
| Week 4 | To study function of essential fatty acids, - Introduction of essential fatty acids - Function of essential fatty acids 3 | |
| Week 5 | Field trip | |
| Week 6 | To study relationship between n-3 fatty acid deficiency and lead on brain funcitonstructure of lipid<br><br>Effect of lead intake on spatial learning ability - Effect of n-3 fatty acid deficiency and lead combination on olfactory discrimination | |
| Week 7 | Field trip | |
| Week 8 | To study structure and metabolism of lipoprotein | |
| Week 9 | Field trip | |
| Week 10 | To study n-3 fatty acid deficiency on brain funciton<br><br>Introduction of artificial rearing system - N-3 fatty acid deficiency and spatial learning tasks | |
| Week 11 | Field trip | |
| Week 12 | To study classification and function of polysaccharide<br><br>Classifictaion of polysaccharides - Function of polysaccharides 3 | |
| Week 13 | Field trip | |
| Week 14 | To study metabolism of protein 2. 주요 학습내용 - Enzymes of protein - Synthesis and degradation of protein | |
| Week 15 | Final exam | |

| Course Title | Marine Applied Microbiology Laboratory | Course Code | TBA | Section | 001 |
|---|---|---|---|---|---|
| Department | Maritime Biology | Level | 3 | Credit-Theory-Practice | 3-3-0 |
| Class Hours | | | | | |
| Lecturer | Ki Hwan Moon | | | | |
| Methodology of Instruction | Lecture | | | | |
| Evaluation and Grading | Attendance (20%), Discussion Participation (20%), Mid-term Exam (30%), End-term Exam (30%) | | | | |
| Course Description | This course is designed to provide the student with an introduction to the principles and techniques of microbiology. Consideration will be given to microbial structure, growth, physiology, and the reaction of microorganisms to their physical and chemical environments. The laboratory will emphasize the development of proper laboratory technique and the identification of microorganisms. | | | | |
| **Textbooks and References** | | | | | |
| Required Textbooks | Molecular Microbiological Genetic Engineering | | | | |
| References | | | | | |

**Weekely Schedule of Classes**

| Week No. | Course Materials | Other Notes |
|---|---|---|
| Week 1 | safety precautions This course learns basic competency in applied biological science field, which is a future R&D fields of industries needs. This course also aims to nurture research specialists in the biotechnology and marine fisheries fields. 주요학습내용:Lab safety, Fire safety, Chemical safety, Biological safety, LMO, and Research Ethics | |
| Week 2 | Bacterial culture media & Autoclave This course learns basic competency in applied biological science field, which is a future R&D fields of industries needs. This course also aims to nurture research specialists in the biotechnology and marine fisheries fields. 주요학습내용: Bacterial culture medium production / Autoclave operation manual 수업방법: Lectures / Experiments 수업자료: Powerpoint file handout 준비물/과제:Lab. note assignment | |
| Week 3 | Bacterial cell culture & single colony isolation This course learns basic competency in applied biological science field, which is a future R&D fields of industries needs. This course also aims to nurture research specialists in the biotechnology and marine fisheries fields. 주요학습내용: Bacterial cell culture / Bacterial pure culture / loop handling manual 수업방법: Lectures / Experiments 수업자료: Powerpoint file handout 준비물/과제:Lab. note assignment | |

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| **Week 4** | Selective & Differential media / Durham tube assay This course learns basic competency in applied biological science field, which is a future R&D fields of industries needs. This course also aims to nurture research specialists in the biotechnology and marine fisheries fields. 주요학습내용: Selective and differential medium production / Bacterial cell culture / Bacterial cell gas producing check using durham tube 수업방법: Lectures / Experiments 수업자료: Powerpoint file handout 준비물/과제:Lab. note assignment | |
| **Week 5** | Gram staining This course learns basic competency in applied biological science field, which is a future R&D fields of industries needs. This course also aims to nurture research specialists in the biotechnology and marine fisheries fields. 주요학습내용:Gram negative and positive cell differentiation 수업방법: Lectures / Experiments 수업자료: Powerpoint file handout 준비물/과제:Lab. note assignmen | |
| **Week 6** | Motility assay This course learns basic competency in applied biological science field, which is a future R&D fields of industries needs. This course also aims to nurture research specialists in the biotechnology and marine fisheries fields. 주요학습내용: Bacterial flagella mediated cell motility check 수업방법: Lectures / Experiments 수업자료: Powerpoint file handout 준비물/과제:Lab. note assignment | |
| **Week 7** | Antibiotics resistance This course learns basic competency in applied biological science field, which is a future R&D fields of industries needs. This course also aims to nurture research specialists in the biotechnology and marine fisheries fields. 주요학습내용:Drug-resistant bacteria isolation using Disc diffusion and MIC tests 수업방법: Lectures / Experiments 수업자료: Powerpoint file handout 준비물/과제:Lab. note assignment | |
| **Week 8** | MId-term Exam | |
| **Week 9** | Defined Optimal Growth Conditions This course learns basic competency in applied biological science field, which is a future R&D fields of industries needs. This course also aims to nurture research specialists in the biotechnology and marine fisheries fields. 주요학습내용: pH and salinity optimal condition check 수업방법: Lectures / Experiments 수업자료: Powerpoint file handout 준비물/과제:Lab. note assignment | |
| **Week 10** | Growth curve I This course learns basic competency in applied biological science field, which is a future R&D fields of industries needs. This course also aims to nurture research specialists in the biotechnology and marine fisheries fields. 주요학습내용: Spectrophotometer operation manual 수업방법: Lectures / Experiments 수업자료: Powerpoint file handout 준비물/과제:Lab. note assignment | |
| **Week 11** | Growth curve II This course learns basic competency in applied biological science field, which is a future R&D fields of industries needs. This course also aims to nurture research specialists in the biotechnology and marine fisheries fields. 주요학습내용:Viable Cell counting and cell number calculation 수업방법: Lectures / Experiments 수업자료: Powerpoint file handout 준비물/과제:Lab. note assignment | |

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| **Week 12** | Biochemical analysis I This course learns basic competency in applied biological science field, which is a future R&D fields of industries needs. This course also aims to nurture research specialists in the biotechnology and marine fisheries fields. 주요학습내용:Protease, Amylase, Cellulase tests using skim milk agar, starch agar, and TY-CMC agar, respectively 수업방법: Lectures / Experiments 수업자료: Powerpoint file handout 준비물/과제:Lab. note assignment | |
| **Week 13** | :Biochemical analysis II This course learns basic competency in applied biological science field, which is a future R&D fields of industries needs. This course also aims to nurture research specialists in the biotechnology and marine fisheries fields. 주요학습내용:API 20E kit, API ZYM kit, Catalase assay, Hemolysin test 수업방법: Lectures / Experiments 수업자료: Powerpoint file handout 준비물/과제:Lab. note assignment | |
| **Week 14** | Nematode observation This course learns basic competency in applied biological science field, which is a future R&D fields of industries needs. This course also aims to nurture research specialists in the biotechnology and marine fisheries fields. 주요학습내용: NGM medium preparation. OP50 culture, Caenorhabditis elegans observation, C. elegans picking practice 수업방법: Lectures / Experiments 수업자료: Powerpoint file handout 준비물/과제:Lab. note assignmen | |
| **Week 15** | Final exam | |