

Faculty of Fisheries, Kasetsart University

Subject:	01252535 Ecology of Sediment	Semester Credit	3 (lecture-laboratory-self study: 3-0-6)
Key words:	Bottom Sediments, Benthic Ecology		
Lecturer:	Associate Professor Dr. Charumas Meksumpun (Principle laboratory building; room 108) (on Thursday; 1-3 pm)		
Objective:	<ol style="list-style-type: none">1. To understand the sources, types, and function of sediments in the aquatic ecosystems2. To understand the inter-relation among the sediments and other abiotic and biotic resources in various types of aquatic ecosystems3. To apply the knowledge for conservation and remediation management of the aquatic resources		
Class outline:	Sources, compositions, and categorizations of sediments. Sediment sampling techniques. Physical, chemical, and biological properties of aquatic sediments. Production, decomposition, and nutrient cycling. Roles of sediments on benthic community. Sediment organic pollution and remediation approach.		
Class schedule:	<ol style="list-style-type: none">1. Introduction / the importance of sediments2. Sources and types of the sediments3. The survey and collection of the sediments4. The physical characteristics of the sediments5. The physical characteristics of the sediments6. The chemical characteristics of the sediments7. The chemical characteristics of the sediments8. The biological characteristics of the sediments9. The biological characteristics of the sediments10. Nutrient cycles in the benthic boundary layer11. Benthic production and food chain12. Benthic decomposition13. Human impacts and sediment pollution14. Sediment remediation and conservative management15. Paper seminar / open discussion		
Important items:	Sediment Ecology and Conservative Management		
Self-studies and advices	Data bases of US EPA, Website of Woods Hole Oceanographic Institute USA		
Textbook:	The Ecology of Sediments (<i>Gray, 1981</i>) Sediments (<i>Meksumpun, 2005</i>)		
Condition:	Principle of Aquatic Ecology		
Assessment method:	<ol style="list-style-type: none">1) Mid-term and Final-examination,2) Literature review, report, and seminar,3) Group discussions / class attention		
Evaluation criteria:	Total > 50% = pass, class-group based criteria		
Relevant matters:	Early diagenesis of benthic boundary layer		

Faculty of Fisheries, Kasetsart University

Subject:	01255543 Marine Biological Diversity	Semester Credit	3 (lecture- laboratory- self study: 3- 0-6)
Key words:	Biodiversity. Ecology, Marine Science		
Lecturer:	Associate Professor Dr. Chittima Aryuthaka, Dr. Napakhwan Whanpetch, Dr. Yaowaluk Monthum (room no. and building) MS 5228, Marine Science building (contact hours) 8:30-16:30 Tel. 02-561-4288		
Objective:	Provide student with an understanding of concepts and principles of marine biological diversity, mathematical models on distribution of marine organisms, biodiversity index, Lawsand conventions for marine biodiversity		
Class outline:	Marine ecological concepts and principle, terms and definitions of marine biological diversity, mathematical models on distribution patterns of marine resources, measuring biological diversity and its potential for marine environmental monitoring and assessment, including relevant legislations and conventions.		
Class Schedule	<ol style="list-style-type: none">1. Introduction and description of marine biological diversity.2. Term and definitions of marine diversity.3. History of marine ecological concepts and principle.4. Distribution of marine organisms.5. Measuring of biological.6. Utilization and potential of marine biological diversity index for marine environmental monitoring and assessment.7. Law and relevant legislation and conventions for marine biological diversity		
Important items:			
Self-studies and advices	3 hrs./week		
Textbook:	Handout is prepared by lecturer. The lecturer will recommend the textbook for self-studies.		
Condition:	Nil		
Assessment method:	Examination and continuously assessment on the report and participation into class and discussion.		
Assessment criteria:			
Relevant matters:	Conducted in English		

Faculty of Fisheries, Kasetsart University

Subject:	01253511 Coastal and Marine Fishery Management	Semester Credit	3 (lecture-laboratory-self study: 3-0-6)
Key words:			
Lecturer:	Assistant Professor Dr. WANGVORALAK, Sansanee (room no. and building) (contact hours)		
Objective:	<ol style="list-style-type: none">1. Understand general principles and objectives and of fisheries management2. Learn and understand principles and applications of fish population dynamics and fisheries stock assessment from classic case studies in fisheries3. Develop skill in analyzing data and information on fish and fisheries as well and in interpreting the results by providing scientific evidence.		
Class outline:	Definition and principle of fisheries management. Background and evolution of fisheries management philosophy. Basic concepts for coastal and marine fisheries management and models in fisheries. Case studies.		
Class schedule:	<ol style="list-style-type: none">1. Introduction: Review-Objective of fishery management; History of fisheries management; Modeling2. Growth, Mortality, Catch Process3. Biomass of a cohort4. Whale fishery5. 1st MIDTERM-In class (TBA), 1st Midterm Solution,6. Biomass Dynamic Models7. Biomass Dynamic Models (cont.), Fisheries Management Techniques & Tools8. Fisheries Management Techniques & Tools (cont.)9. Small Shoaling Pelagic Fisheries10. Small Shoaling Pelagic Fisheries (cont.), Review & Wrapping up11. 2nd MIDTERM-In class (TBA), 2nd Midterm Solution,12. MSY, MEY, and CPUE13. The Northern Prawn Fisheries14. Yield per Recruit Model, Tropical Penaeid Shrimp Fishery15. Spawner Recruit Model, FINAL-In class		
Important items:			
Self-studies and advices	TBA		
Textbook:	Handout is prepared by lecturer. The lecturer will recommend the textbook for self-studies.		
Condition:	Nil		
Assessment method:	Examination and continuously assessment on the report and participation into Class and discussion.		
Assessment criteria:	Grading: $\geq 91\%$ A, 86-90% B+, 81-85% B, 76-80% C+, 71-75% C, 66-70% D+, 61-65% D, $\leq 60\%$ F		
Relevant matters:	Conducted in English		

Faculty of Fisheries, Kasetsart University

Subject: 01253512 Semester
Fishery Resources and Management Credit 3
(lecture-laboratory-self study: 3-0-6)

Key words:

Lecturer: Dr. Sansanee Wangvoralak
(Room no. 4108 at Department of Fishery Management)
(9.00-16.00 from Monday to Friday)

Objective: 1. Understanding of fishery resources and fishery management
2. Familiarity with legal and institutional considerations in national and international level

Class outline: Structure of fisheries industry, important of fisheries industry, Fisheries in Thailand and the world, fishery resources and fisheries, concept and theory in fishery management, fishery management measures, laws, regulations and agreements in relation to fishery management in national and international level, Fishery management in Thailand and the world.

Class schedule: 1. Important of fisheries industry and fisheries problems
2. Knowledge relevant to fishery management: water resource, fishery resources and structure of fisheries
3. Biology and ecology aspects for fishery management (1)
4. Biology and ecology aspects for fishery management (2)
5. Economic aspect relevant to fishery management
6. Concept and theory in fishery management (1)
7. Concept and theory in fishery management (2)
8. Present and discuss on self-study report
9. Fishery Governance (1)
10. Fishery Governance (2)
11. Fishery management measures
12. Coastal, Off-shore and oversea fishery resources Management
13. Laws, regulations and agreements in relation to fishery management in national and international level (1)
14. Laws, regulations and agreements in relation to fishery management in national and international level (2)
15. Fishery management in Thailand and the world

Important items:

Self-studies and advices

Textbook: Bavinck, M. et al. 2005 Interactive Fisheries Governance: A guide to better practice. Centre for Maritime Research. Amsterdam. FAO. 2000. Use of property rights in fisheries management. Food and Agriculture of the United Nations. Rome.
FAO. 2002. A fishery manager's guidebook. Food and Agriculture of the United Nations. Rome.
Kooiman, J., et al. 2005. Fish for Life: Interactive Governance for Fisheries. Amsterdam University Press. Amsterdam.
Pomeroy, R.S. and R. Guieb. 2006. Fishery Co-Management: A Practical Handbook. CABI Publishing, Massachusetts.
Chuenpagdee, R. (ed.). 2011. World Small-Scale Fisheries Contemporary Visions. Eburon Academic Publishers, Netherlands.

Condition:

Assessment method:

Assessment	A	80-100 points
criteria:	B+	75-79 points
	B	70-74 points
	C+	65-69 points
	C	60-64 points
	D+	55-59 points
	D	50-54 points
	F	0-49 points

Relevant matters:

Faculty of Fisheries, Kasetsart University

Subject:	01253521 Fishery Resource Economics	Semester Credit	3 (lecture-laboratory-self study: 3-0-6)
Key words:	Fishery resource economics, Resource Economics		
Lecturer:	Dr. Varunthat Dulyapurk Rm#4211 Department of Fishery Management, Faculty of Fisheries 9.00 – 16.00 (Mon-Fri) Appointment preferred.		
Objective:	This course will familiarize students with the theory and application of economics to fishery resource problems and management schemes.		
Class outline:	Principle and theory in advanced fishery economics. Static fishery economics. Dynamic fishery resource economics. Multi-species fishery economics. Fishery resource value assessment and fishery economic models.		
Class schedule:	<ol style="list-style-type: none">1. Mathematical Economics I2. Mathematical Economics II3. Microeconomics4. Fishery Resource Economics: Static optimization perspective I5. Fishery Resource Economics: Static optimization perspective II6. Fishery Resource Economics: Dynamic optimization perspective I7. Fishery Resource Economics: Dynamic optimization perspective II8. Fishery Resource Economics: Schooling Fisheries I9. Fishery Resource Economics: Schooling Fisheries II10. Fishery Resource Economics: Search Fisheries I11. Fishery Resource Economics: Search Fisheries II12. Fishery Resource Economics: Multi-species Fisheries I13. Fishery Resource Economics: Multi-species Fisheries II14. Fishery Resource Economics: Impact Assessment I15. Fishery Resource Economics: Impact Assessment II		
Important items:	none		
Self-studies and advices	none		
Textbook:	<ul style="list-style-type: none">• P.H. Neher. 1990. <i>Natural Resource Economics</i>. Cambridge University Press.• D. Leonard and N. Van Long. 1992. <i>Optimal Control Theory and Static Optimization in Economics</i>. Cambridge University Press.• Anderson, Lee G. 1986. <i>The Economics of Fisheries Management</i>. The John Hopkins University Press.• Cunningham, Stephen, Michael R. Dunn and David Whitmarsh. 1985. <i>Fisheries Economics an introduction</i>. St. Martin's Press.		
Condition:	-		
Assessment method:	Examinations, term paper and homework assignments.		
Assessment criteria:	-		
Relevant matters:	-		

Faculty of Fisheries, Kasetsart University

Subject:	01251521 Advanced Freshwater Aquaculture	Semester Credit	3 (lecture-laboratory-self study: 3-0-6)
Key words:	Freshwater Aquaculture, Sustainable Aquaculture		
Lecturer:	Dr. Suchart Ingthamjitr –Principal Instructor Assistant Professor Dr. Ruangvit Yoonpundh Mek Boonpharm Building, Department of Aquaculture Monday-Friday afternoon official hours 08.30-16.30 hours		
Objective:	<ol style="list-style-type: none">1. To overview global aquaculture and freshwater aquaculture in Thailand2. To understand principle of different freshwater aquaculture systems; constraints and challenges3. To promote sustainable freshwater aquaculture development		
Class outline:	Freshwater aquaculture systems. Principle, advantage and disadvantage of each culturing system and the prospect of freshwater aquaculture development.		
Class schedule:	<ol style="list-style-type: none">1. Overview of freshwater aquaculture2. Interactions between aquaculture and the environment3. Systems carrying capacities and operation intensities4. Species cultured and culture system development5. Reductions in wastes from freshwater aquaculture6. Nutritional strategies and present approach to waste management7. Technologies for sustainable aquaculture development8. Integrating aquaculture systems9. Recirculating aquaculture systems10. Organic aquaculture systems11. The legal regime governing aquaculture12. Aquaculture certification13. Seminar : Project presentation assignment14. Seminar : Project presentation assignment15. Seminar : Project presentation assignment		
Important items:	All topics		
Textbook:	Handout is prepared by lecturer. The lecturer will recommend the textbook for self-studies.		
Self-studies and advices	Reading textbooks involving sustainable aquaculture, freshwater aquaculture, and Journal of Aquaculture, etc.		
Condition:	Nil		
Assessment method:	Examination and continuously assessment on the report and participation into class and discussion.		
Assessment criteria:	-		
Relevant matters:	Conducted in English		

Faculty of Fisheries, Kasetsart University

Subject:	01251532 Application of Chemicals and Drugs in Aquaculture	Semester Credit	3 (lecture-laboratory-self study: 3-0-6)
Key words:	antimicrobial agents; disinfectants; aquaculture		
Lecturer:	Dr. Nontawith Areechon Rm 315, Department of Aquaculture Monday till Friday 9.00-16.00		
Objective:	To learn about the principle of the application of disinfectants, antimicrobial agents and other compounds that can be applied in aquaculture. Students will be informed about mode of actions, residual effects and other information of each chemical.		
Class outline:	Chemicals and drugs used in aquaculture for improving water quality and prevention and control of diseases. Mode of action and effect of water quality on mode of action of chemicals and drugs. Effect of chemicals and drugs on pond ecosystem.		
Class schedule:	<ol style="list-style-type: none">1 : Relationship between aquaculture systems and disease outbreaks2 : Significant diseases in freshwater and brackish water aquaculture3 : Significant diseases in freshwater and brackish water aquaculture4 : Definitions and sources of drugs5 : Units and calculation methods for the drug applications in Aquaculture6 : Units and calculation methods for the drug applications in Aquaculture7 : Considerations for the effective applications of chemicals and drugs in aquaculture8 : Considerations for the effective applications of chemicals and drugs in aquaculture8 : Applications of disinfectants in aquaculture9 : Applications of disinfectants in aquaculture10 : Applications of disinfectants in aquaculture11 : Applications of anti-microbial agents in aquaculture12 : Applications of anti-microbial agents in aquaculture13 : Applications of other compounds in aquaculture: vitamins, probiotics, immunostimulants, algicide <i>etc</i>14 : Applications of other compounds in aquaculture: vitamins, probiotics, immunostimulants, algicide <i>etc</i>15 : Applications of other compounds in aquaculture: vitamins, probiotics, immunostimulants, algicide <i>etc</i>		
Important items:			
Textbook:	Handout is prepared by lecturer. The lecturer will recommend the textbook for self-studies.		
Self-studies and advices			
Condition:	Nil		
Assessment method:	Examination and continuously assessment on the report and participation into class and discussion.		
Assessment criteria:	Overall performances from examination, report and other assignments		
Relevant matters:	Conducted in English		

Faculty of Fisheries, Kasetsart University

Subject:	01252571 Diseases of Aquatic Animals	Semester Credit	3 (lecture-laboratory-self study: 2-2-5)
Key words:	Diseases, Aquatic Animals		
Lecturer:	Assistant Professor Dr. Niti Chuchird (room no. and building) FI 602 (contact hours)		
Objective:	1. To understand the disease process in aquatic animals 2. To understand the basic principles of diagnosis of diseases of aquatic animals 3. To understand the prevention and control of diseases of aquatic animals		
Class outline:	Aquatic animal diseases caused by bacteria, virus and fungi. Diseases protection and treatment.		
Class schedule:	1. Class orientation, Introduction to disease, Basic disease terminology 2. Introduction to viral diseases 3. Introduction to bacterial and fungal diseases 4. Invertebrate defense system 5. Vertebrate immunity 6. Viral diseases of shrimp 7. Bacterial diseases of shrimp 8. Viral diseases of fishes 9. Bacterial diseases of fishes 10. Protozoa and parasites of shrimp 11. Protozoa and parasites of fishes 12. Non infectious diseases 13. Disease management 14. Water qualities 15. Chemical and drug use in aquaculture		
Important items:	-		
Textbook:	1. Chanratchakool, P., J.F. Tumbull S.F. Smith, Ian H. MacRae and C. Limsuwan . 1998. Health Management in Shrimp Ponds. (3 rd Edition) Aquatic Animal Health Research Institute, Thailand. 111 p. (NAGA award from ICLARM) 2. Roberts, R. J. 2012. Fish Pathology, 4th Edition. Wiley-Blackwell. 590 p.		
Self-studies and advices	-		
Condition:	-		
Assessment method:	Midterm examination 20% Assignment 20% Laboratory project 20% Final examination 40%		
Assessment criteria:	Grade Lowest Cutoff A 80 B+ 75 B 70 C+ 65 C 60 D+ 55 D 50 F less than 50		
Relevant matters:	-		

Faculty of Fisheries, Kasetsart University

Subject:	01254531 Fishery Product Biotechnology	Semester Credit	3 (lecture-laboratory-self study: 3-0-6)
Key words:	Biotechnology; Fish; Fishery Products		
Lecturer:	Assistant Professor Dr. Yoawapha Waiprib Room no.803 Boon Indrambarya Building		
Objective:	Upon successful completion of this course, students will 1. able to demonstrate a principal knowledge, and scope of biotechnology; 2. uire mastery with the major issues, concepts, and subject areas in food biotechnology; 3. uire mastery of sourcing and synthesizing information in aspects of biotechnology as it applies to fish and fishery products; 4. able to demonstrate sufficient knowledge about the occurrence and significance of biotechnology being used in fish and fishery products and be able to apply that knowledge for advanced analysis in the context of the food system, and regulatory aspects.		
Class outline:	Overview and scope of food biotechnology, basic principle of food fermentation, fish fermentation technology, fishery products derived from fermentation process, and genetic engineering, current issues in fishery product biotechnology, field trip required.		
Class schedule:	1. Overview and scope of food biotechnology 2. Traditional biotechnology 3. Modern biotechnology 4. Basic principles of fermentation 5. Downstream process 6. Fish fermentation 7-11. Fishery products derived from fermentation process 12. Fishery products derived from modern biotechnology 13. Food safety risk analysis of food derived from modern biotechnology 14. Current issues in fishery product biotechnology 15. Field trip		
Important items:	Relationship of grading strategy and student learning outcomes: 1. Homework will require an understanding of lecture material and reading assignments. 2. Exams will require students to demonstrate mastery of course material and synthesize available information into practical demonstrations of food biotechnology concepts. 3. Case study will require the student to demonstrate their subject matter mastery, communication skill, and ability to obtain primary sources of best available information in an applied science interpretative challenge.		
Textbook:	Handout is prepared by lecturer. The lecturer will recommend the textbook for self-studies.		
Self-studies and advices:			
Condition:	Nil.		
Assessment method:	Examination and continuously assessment on the report and participation into class and discussion.		

Assessment
criteria:

Grade scale:

A	>80%
B+	75-79%
B	70-74%
C+	65-69%
C	60-64%
D+	55-59%
D	50-54%
F	≤49

Grading Breakdown:

Homework and discussion	20%
Mid semester exam	25%
Final exam	25%
Case study	30%

Relevant matters: Conducted in English.

Faculty of Fisheries, Kasetsart University

Subject:	01254521 Food Additives in Fish and Fishery Products	Semester Credit	3 (lecture-laboratory-self study: 3-0-6)
Key words:	Food Additives in Fish and Fishery Products		
Lecturer:	Assistant Professor Dr. Yoawapha Waiprib Room no.803 Boon Indrambarya Building		
Objective:	Upon successful completion of this course, students will 1. be able to demonstrate a <i>principal</i> knowledge of food additive; 2. acquire mastery with the major issues, concepts, and subject areas in food additives being used in fish and fishery products; 3. acquire mastery of sourcing and synthesizing information in aspects of food safety as it applies to fish and fishery products; 4. be able to demonstrate sufficient knowledge about the occurrence and significance of major food additive used in fishery products and be able to apply that knowledge for advanced analysis in the context of the food system, and regulatory aspects.		
Class outline:	Classification, properties, and uses of food additives in fish and fishery products, safety and regulation related food additives, current issues in food additives.		
Class schedule:	<ol style="list-style-type: none">1. Classification of food additives2. Food preservatives3. Natural antimicrobial agents4. Acidulants5. Phosphates6. Sequestrants7. Emulsifiers8. Enzymes9. Coloring agents10. Flavoring agents11. Antioxidants12. Gums and phyco-colloids13. Nutritional additives and nutrition labeling14. Laws and regulations on use15. Current issues in food additives.		
Important items:	Relationship of Grading Strategy and Student Learning Outcomes: <ol style="list-style-type: none">1. Homework will require an understanding of lecture material and reading assignments.2. Exams will require students to demonstrate mastery of course material and synthesize available information into practical demonstrations of food additive concepts.3. Case study will require the student to demonstrate their subject matter mastery, communication skill, and ability to obtain primary sources of best available information in an applied science interpretative challenge.		
Textbook:	Handout is prepared by lecturer. The lecturer will recommend the textbook for self-studies.		
Self-studies and advices	Online materials for self-studies: General standard for food additives (CODEX STAN 192-1995). http://www.codexalimentarius.net/gsfaonline/docs/CXS_192e.pdf		
Condition:	Nil.		
Assessment method:	Examination and continuously assessment on the report and participation into class and discussion.		

Assessment
criteria:

Grade scale:

A	>80%
B+	75-79%
B	70-74%
C+	65-69%
C	60-64%
D+	55-59%
D	50-54%
F	≤49

Grading Breakdown:

Homework and discussion	20%
Mid semester exam	25%
Final exam	25%
Case study	30%

Relevant matters: Conducted in English.

Faculty of Fisheries, Kasetsart University

Subject:	01254524 Marine Biotoxins	Semester Credit	3 (lecture-laboratory-self study: 3-0-6)
Key words:	Biotoxins; Marine; Marine biotoxins; Toxins; Marine organisms; Risk and food safety management; Toxin analysis; Public health awareness		
Lecturer:	Assistant Professor Dr. Kangsadan Boonprab Room 704; Boon Intrarumphun Building; Faculty of Fisheries, Kasetsart University Contact hours: Available any time; except lecture hours		
Objective:	To know and realize the knowledge, current research, practical skill of the research and risk and food safety management related to class outline		
Class outline:	Marine biotoxins, types, cause of origin, pharmacological and chemical characteristics, control and prevention of intoxication, research in marine toxins.		
Class schedule:	<ol style="list-style-type: none">1. Guide line to the whole course outline; Lecturer contact; textbook for study; home work; report; current research seminar and presentation; criteria for evaluation; Pre-test2. (1) Introduction to Marine biotoxin science [concept, types and its risk and food safety management system]3. (2) Biotoxins related to invertebrates and planktons<ol style="list-style-type: none">(2.1) Echinoderms sponins/ gastropod tetramine4. (2.2) Paralytic Shellfish Poison5. (2.2) Paralytic Shellfish Poison (continue)6. (2.3) Amnestic Shellfish Poison7. (2.4) Diarrhetic Shellfish Poison8. (2.5) Palytoxin (2.6) Neurotoxin9. Mid-term examination10. (3) Biotoxins related to vertebrate<ol style="list-style-type: none">(3.1) Tetrodotoxins11. (3.2) Ciguatera toxins12. (3.2) Ichthyotoxins<ol style="list-style-type: none">(3.3) Glycerine and wax ester(4) Marine animals with stings and bites<ol style="list-style-type: none">(4.1) Mollusc(4.2) Fish13. (5) Public health awareness and guideline : monitoring and licensing (6) Research in Marine biotoxins<ol style="list-style-type: none">(6.1) Research technique in marine biotoxins<ol style="list-style-type: none">(6.1.1) Sample procurement(6.1.2) Toxicity assay (bioassay)(6.1.3) Other assay technique(6.1.4) Monitoring program14. (7) Current and interest research in Marine biotoxins15. Final-examination		
Important items:			
Textbook:	Handout is prepared by lecturer. The lecturer will recommend the textbook for self-studies.		
Self-studies and advices			
Condition:	Nil		
Assessment method:	Examination and continuously assessment on the report and participation into class and discussion.		

Assessment criteria:	1) Scoring ratio [Total 100 Score]	
	1.1) Self study; presentation and report	15 Score
	1.2) Home work (5 works)	25 Score
	1.3) Examination	
	1.3.1) Midterm examination	30 Score
	1.3.2) Final examination	30 Score
	2) Grade evaluation: Score evaluation:-	
	A: 87-100	
	B+: 78-86	
	B: 60-77	

Relevant matters: Conducted in English

Faculty of Fisheries, Kasetsart University

Subject:	01254551 Fishery Product Development	Semester Credit	3 (lecture-laboratory-self study: 3-0-6)
Key words:			
Lecturer:	Dr. Nantipa Pansawat FI 707 Mon.-Fri. 8.30-16.30 hrs. Please call or email for appointment.		
Objective:	This course will provide basic knowledge and tools in new food product development and its application, focusing on fishery product development.		
Class outline:	Principles and process of food product development, idea generation and evaluation, new product assessment and evaluation, product introduction to the market, applied statistics for product development and guidelines for fishery product development.		
Class schedule:	<ol style="list-style-type: none">1. Introduction: importance and dynamic of new food products2. Principles and process of food product development3. Idea generation and screening4. idea screening (cont.) and concept development5. Prototype product development6. Development of thermal process fishery products7. Development of surimi based products8. Development of frozen products and miscellaneous products9. Experimental design and planning for product development10. Applied statistics for product development11. Applied statistics for product development (cont.)12. Techniques in recipe and process development13. New product testing and evaluation14. Product launching and maintenance15. Term project presentation by students		
Important items:	-		
Textbook:	Handout is prepared by lecturer. Recommended textbooks for self-studies: Earle, M., R. Earle and A. Anderson. 2001. Food Product Development. Woodhead Publishing Ltd. Cambridge. 380 p. Hu, R. 1999. Food Product Design. Technomic Publishing Co., Inc. Lancaster. 225 p.		
Self-studies and advices	Practice using statistical program for analyzing data. Follow trends and updates in new food products, market situation and consumer behavior.		
Condition:	Nil		
Assessment method:	Examination and continuously assessment on the report and participation in class and discussion. <ol style="list-style-type: none">1. Written examination (Midterm and final examination) 60%2. Assignment, term project report and presentation 40%		
Assessment criteria:	Grade equivalents (A, B+, B,, F), consulting class average.		
Relevant matters:	Conducted in English.		

Faculty of Fisheries, Kasetsart University

Subject:	01254581 System Analysis and Management in Fish Processing Industry	Semester Credit	3 (lecture-laboratory-self study: 3-0-6)
Key words:	System analysis, management, fish processing		
Lecturer:	1. Dr. Jirawan Maneerote Office room: 715 Department of Fishery Products Office hours: To be announced 2. Associate Professor Wanchai Worawattanmetheekul Office room: 506 Department of Fishery Products Office hours: To be announced		
Objective:	This course aims to introduce knowledge on principle of system analysis including mathematic model to improve the plant layout, plant design, PERT/CPM, linear programming, logistic and supply chain in fishery processing industry.		
Class outline:	Principles of system analysis to improve processing, planning, design, control and effective operation in food and fish processing industry.		
Class schedule:	<ol style="list-style-type: none">1. Introduction2. Meaning of system analysis and operation3. Plant layout and plant design4. Mathematic model for plant layout and design5. Tool and instrument for plant layout6. PERT/CPM7. Linear Program for operation system8. Simplex and transportation9. Job ordering10. Control chart11. Quality control and management in fish processing industry12. Fish processing industry management13. Logistic and supply chain14. Term project/Presentation15. Presentation		
Important items:	-		
Textbook:	Park, C.S. 2001. Contemporary Engineering Economics. 3 rd Edition. Addison Wesley. California, USA. In addition to the above, the students will be provided with handouts by the lecturer.		
Self-studies and advices	Require textbooks can be borrowed in the university library. Other software packages can be download trial version from internet.		
Condition:	Attendance will be checked regularly. The university rule on this shall be applied, in which unexcused absence from class of more than 20% of total time, will be grounds for disallowing student from taking the final exam. Late student be marked as such. Avoiding plagiarism.		
Assessment method:	Assessment will be by means of written exams, presentation and assignment. A grade of 50% warrants a pass.		
Assessment criteria:	Grade distribution: Midterm examination 30% Assignments 10% Final examination 30% Term projects (defend) 10% Report 15% Attend class 5%		
Relevant matters:	-		

Faculty of Fisheries, Kasetsart University

Subject: 01256598 Selected Topics in Fishery Science and Technology Semester Credit 3 (lecture-laboratory-self study: 3-0-6)

Key words:

Lecturer: Assistant Professor Dr. Methee Kaewnern, Assistant Professor Dr. Wanwimol Klaypradit
Department of Fishery Management
Mon-Fri 8.30-16.30

Objective: 1. To offer the ability to seek knowledge and apply it to fishery research field

Class outline: Study and research in aquaculture at the master's degree level and compile into a written report.

Class schedule:

1. Creative problem solving and decision making
2. Propose the research plan
3. Conduct research at selected Kasetsart Fishery Station
4. Conduct research at selected Kasetsart Fishery Station
5. Conduct research at selected Kasetsart Fishery Station
6. Conduct research at selected Kasetsart Fishery Station
7. Conduct research at selected Kasetsart Fishery Station
8. Conduct research at selected Kasetsart Fishery Station
9. Conduct research at selected Kasetsart Fishery Station
10. Conduct research at selected Kasetsart Fishery Station
11. Conduct research at selected Kasetsart Fishery Station
12. Conduct research at selected Kasetsart Fishery Station
13. Conduct research at selected Kasetsart Fishery Station
14. Presentation and discussion
15. Presentation and discussion

Important items:

Textbook:

Self-studies and advices

Condition:

Assessment method: Assess from participated activities; literature review, report, discussion and presentation.

Assessment criteria:

Relevant matters: