Marine Pollution
Course Syllabus 2009

T.K. Liu
Institute of Ocean Technology and Marine Affairs

Marine Pollution, Fall 2009

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- Email
tkliu@mail.ncku.edu.tw
- Courses offered:
  - Marine Protected Area
  - Marine Pollution
  - Seminar 1
Office hours

Tue 2:00p-4:00p; Thu 2:00p-4:00p; Otherwise by email appointment.

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Topics

Total 46 hours

Introduction
Categories of additions; Sources of Inputs; Defining pollution; Global legal instruments; Priority; Approaches to pollution control

Oxygen Demanding Wastes
Oxygen demand; Oxygen budget; Estuaries; Marine Eutrophication; Public health risks; Sewage treatment; Ocean Outfall; Case studies

Ocean Hypoxia
Oxygen distribution; Definition; Distribution of hypoxia; Causes; Case studies

Harmful Algae Bloom
Definition; Causative organisms; Impact; Relation with Eutrophication; In-situ treatment; Case Studies

Marine Oil Pollution
Input; What is oil; Fate of spilled oil; Treatment of oil at sea; Dispersant; Aerial observation of oil; Beach cleaning; Environmental impact; Net Environmental Benefit Analysis; Public health risks and commercial damage; Case Studies

Heavy Metals Pollution
Characteristics; Input and uptake; Mercury; Cadmium; Copper; Lead; Tin; Arsenic; Silver; Case Studies

Halogenated Hydrocarbons
Characteristics; Input; Fate; Biological effects of halogenated compounds

Student Presentation
Course format

- The course includes lectures and discussions of research articles.
- The lectures are based on textbooks and the primary literature, with attention given to active areas of research.

Grading

- Class participation 10%
- Midterm 30%
- Oral presentation 15%
- Term paper 15%
- Final Exam 30%

Textbooks


Journals

- Science/Nature
- Marine Pollution Bulletin
- TBA in class
Oral presentation

- Each student will select a current topic from marine pollution research related journals or publications for class presentation.
- One page abstract due in class, Oct 29, 2009
- Students are encouraged to submit abstract ahead of time. Change of topic after Oct 29 should be discussed with the instructor.
- In the final weeks of the course, each student will take turn presenting his work.

Term paper

- Single-spaced 5-page term paper due in the final week; the paper should conform to the format of Conference on Ocean Engineering.
- Plagiarism is unacceptable in this class. Do not copy someone else’s words, statements, or thoughts without giving credit to the source of that information.
- It is important to note that you can refer to information or ideas from another source, but you must correctly cite the sources in your work. Zero will be given when plagiarism is evident.
### Exam
- Mid-term exam
  9:00 pm – 12:00 pm, Nov 12, 2008
- Final exam
  9:00 pm – 12:00 pm, Jan 14, 2009

### Attendance
- Attendance and participation in class is expected.
- In particular, if you miss a class due to a family or medical emergency, University approved activity, or others, you must notify the instructor in advance of the absence (if planned) or as soon as possible afterward with proper documentation (if due to an emergency)

### Presentation last year
- 壓艙水交換的風險與監測
- 海域優養化與藻華事件對漁場魚隻死亡情形之影響—以菲律宾Bolinao为例
- 海洋油污染事件損害賠償之探討
- 環境污染物對珊瑚白化的影響
- 生物指標在海洋污染上的應用
- 海水淡化廠對海洋環境之衝擊
- 海洋垃圾對海洋環境的影響
- 從台灣近年來重大油污事件來看目前緊急應變計畫的缺失