## CE/ISE/PPD 589: Port Engineering: Planning and Operations

**Fall, 2010 – 3 Units plus 1 Unit of Direct Research (Instructor Signature Required)**

<table>
<thead>
<tr>
<th>Class Meeting</th>
<th>Wednesday</th>
<th>6:30 p.m. to 9:10 p.m.</th>
<th>KAP 138</th>
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<tbody>
<tr>
<td>Professor</td>
<td>Dr. Hanh D. Le-Griffin</td>
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<tr>
<td>Office</td>
<td>KAP 234A</td>
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<tr>
<td>Phone</td>
<td>213-812-2905 Campus Office — 604-904-9719 Off-Campus Office (M-F)</td>
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<tr>
<td>Email</td>
<td><a href="mailto:hdle@usc.edu">hdle@usc.edu</a></td>
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<tr>
<td>Office Hours</td>
<td>Wednesday</td>
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### Teaching Assistant

| Email         |                       |                       |         |

### Prerequisites

There are no specific prerequisites, although a familiarity with, or an interest in, marine container logistics, intermodal operations, and maritime transport will be helpful. Most graduate students in business, planning, economics, and engineering are equipped to complete the course successfully.

### Textbook

No textbook is required. Course readings are selected from a variety of books, journals, article, case studies, and government reports. Readings will be made available for purchase in a course reader. However, there are several text books that I recommend reading for an in depth understanding of this subject. These are available at USC Book Store:


3. *Port Operations, Planning and Logistics (2009)* by Khalid Bichou

### Final grade schema is based on the following percentages of graded coursework:

<table>
<thead>
<tr>
<th>Quiz and Class Participation</th>
<th>20 %</th>
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<tbody>
<tr>
<td>Three Assignments</td>
<td>30 %</td>
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<tr>
<td>Group Project</td>
<td>30 %</td>
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<tr>
<td>Final Exam</td>
<td>20 %</td>
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<tr>
<td><strong>Total</strong></td>
<td>100 %</td>
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Course Overview:

This interdisciplinary course offers a comprehensive and detailed analysis of the technological applications, economics, and institutions that are collectively shaping a new and highly competitive environment for marine ports. Port authorities, along with private terminal operators, shipping lines, rail companies, stevedore unions, and various service and logistics firms, are adapting to rapid changes in their operating environment. Technological advances in marine engineering and information technologies are lifting the industry to ever-higher levels of operating efficiency. The physical form and managerial characteristics of ports are being rapidly altered in response to the strategic actions being taken by the various institutions that make use of and depend on marine port facilities and services.

The cumulative effect of these changes occurring in the shipping industry, particularly the high-speed and high-capacity handling requirements of current mega container vessels, have placed an immense pressure on port authorities and terminal operators. This circumstance is particularly critical for regional gateway ports which frequently receive large vessels with capacities of 6000 plus containers, such as the Ports of Los Angeles and Long Beach. Given a scarcity of land and severe environmental constraints on terminal expansion, enhancing terminal productivity and efficiency through improved terminal planning, efficient management and advanced technology are essential to port operations.

In this course the agents and issues now changing the operating environment of ports are examined and discussed, and the effects that these changes are likely to have on container ports are analyzed to evaluate required container handling capacity and future trends in port engineering and development.

This course provides various container port topics relating to planning, operations, intermodal transport and logistics services, safety and security, and technological applications and environmental management, each supported with case studies, practical examples and illustrations of the latest developments in the field.

Topics Covered:

1. **Introduction of Modern Container Ports**: Concepts and definitions of physical and operational characteristics of modern container ports and port system, approaches to port operations and management in the context of world-wide production, global supply chains, and modern logistics and liner shipping.

2. **Port Terminal Planning**: Infrastructure and capacity, capacity evaluations, needs assessment and demand forecasting, operational terminal planning.

3. **Port Operations—Part I**: Port operations and services, port layout and configuration, cargo handling processes, equipment and technologies.

4. **Port Logistics**: Network structure of port operations, freight logistics systems and ports, inter-modality and landside port logistics, and integrating ports with global supply chains.

5. **Port Operations—Part II**: Multi-disciplinary approach to port performance, measuring port productivity and efficiency, global logistics and port productivity, port automation.

Completion of this course will provide students with a thorough understanding of the institutional, economic, and technological forces that are now shaping the physical characteristics and service requirements of modern container ports, and how these factors are included in the analysis of terminal capacity, operational performance, and engineering of port features.

**Course Requirements:**

This course is a combination of lectures and seminar-type classes. Students will be required to complete all reading and assignments prior to each class. In addition to class participation, course requirements include periodic group projects, and a final exam.

**Class Website and Communication:**

All class related information, assignments and documents are posted via the Blackboard at [http://blackboard.usc.edu](http://blackboard.usc.edu). You can log in using your USC ID and password. If it is your first time using Blackboard, please spend some time to review the blackboard tutorial to get familiar with the system. For time sensitive matters, USC email is the best way to communicate.

**Statement on Academic Integrity**

USC seeks to maintain an optimal learning environment. General principles of academic honesty include the concept of respect for the intellectual property of others, the expectation that individual work will be submitted unless otherwise allowed by an instructor, and the obligations both to protect one’s own academic work from misuse by others as well as to avoid using another’s work as one’s own.

All students are expected to understand and abide by these principles. SCampus, the Student Guidebook, contains the Student Conduct Code in Section 11.00, while the recommended sanctions are located in Appendix A: [http://www.usc.edu/dept/publications/SCAMPUS/gov/](http://www.usc.edu/dept/publications/SCAMPUS/gov/). Students will be referred to the Office of Student Judicial Affairs and Community Standards for further review, should there be any suspicion of academic dishonesty. The Review process can be found at: [http://www.usc.edu/student-affairs/SJACS/](http://www.usc.edu/student-affairs/SJACS/).

**Statement for Students with Disabilities**

Any student requesting academic accommodations based on a disability is required to register with Disability Services and Programs (DSP) each semester. A letter of verification for approved accommodations can be obtained from DSP. Please be sure the letter is delivered to me (or to TA) as early in the semester as possible.

**DSP Contact Information**

Office location:  STU 301

Hours open:  8:30 a.m. until 5:00 p.m., Monday through Friday.

Phone number:  (213) 740-0776