TRANSPORTATION ENGINEERING MANAGEMENT (TEM) SOLANO CAMPUS

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TEM Courses

TEM 5500 Project Management (3 units)
Term Typically Offered: F
Prerequisite: Admission to the Transportation and Engineering Management program.

Manage projects from small to extremely large. Work individually and in teams to experience managing a project, analyze case studies on specific topics in the field, and practice problem solving using the important concepts and methods such as software for scheduling and resource management. Organizing and managing projects. Selection of alternate projects using financial viability, suitability of the end product, time of delivery, and quality as criteria. Defining scope. Scheduling and resource management. Budgeting and control. Ending projects and learning from them for the future. Examples will be drawn from operations such as engineering and supply chains, including a maritime link. Course offered online only. 3 lectures. Formerly TEM 500 at Cal Maritime.

TEM 5510 International Transportation Economics (3 units)
Term Typically Offered: F
Prerequisite: Admission to the Transportation and Engineering Management program.

Apply microeconomic principles, especially in the field of freight transportation, with special attention to international transport and maritime related scenarios. Classical and behavioral microeconomic methods and practices are used to illuminate the management of enterprises and assets in transportation markets, as well as in their global settings and in the presence of external influences such as regulation and political and social concerns. Work individually and in teams to analyze case studies on specific topics in the field, and practice issue diagnosis and explanation using the important concepts and methods covered. Modern theories of transport supply and demand, the firm and costs, industrial organization in markets, externalities, regulation, and models of social welfare. Examples will be drawn primarily from freight transportation scenarios, including a maritime link. Course offered online only. 3 lectures. Formerly TEM 510 at Cal Maritime.

TEM 5520 Organizational Behavior and Management (3 units)
Term Typically Offered: SP
Prerequisite: Admission to the Transportation and Engineering Management program.

Explores transitions and trends in the environment of contemporary global business processes and activities. Main focus on the human resources channel of the supply chain, including the primary functions of recruiting, training, and work force maintenance. Within this primary focus, control mechanisms (such as protection of the confidentiality of employee records), labor relations, leadership, organizing, and planning are addressed. Case examples in the maritime and logistics industry will frequently be referenced to enhance course objectives. Course offered online only. 3 lectures. Formerly TEM 520 at Cal Maritime.

TEM 5530 Financial Management (3 units)
Term Typically Offered: SP
Prerequisite: Admission to the Transportation and Engineering Management program.

Concepts in corporate financial management and the decision making for a business enterprise. Financial statement analysis, discounted cash flow valuation, net present value and other capital budgeting criteria, interest rate and bond valuation, stock valuation, risk and return trade-off, capital asset pricing model, cost of capital, efficient market hypothesis, and capital structure. Course offered online only. 3 lectures. Formerly TEM 530 at Cal Maritime.

TEM 5540 Information Systems Management (3 units)
Term Typically Offered: SU
Prerequisite: Admission to the Transportation and Engineering Management program.

Systems analysis principles, and investigation of the structure and operations of large, complex modern computer networks. Survey of the major systems used for decision making and data management in international logistics and engineering oriented concerns. Obtain a working knowledge of the functions and data required for each, and how the pieces fit together into a strategy for getting the right information to the right decision maker at the right time. Special emphasis placed on systems particularly important in transportation, logistics, and maritime related firms, and those important in supply chain command and control. Students also learn how to participate in or lead a system design and implementation project. Course offered online only. 3 lectures. Formerly TEM 540 at Cal Maritime.

TEM 5600 Global Logistics and Supply Chain Management (3 units)
Term Typically Offered: SU
Prerequisite: Admission to the Transportation and Engineering Management program.

Logistics is the science of movement of materials from raw material to the customer in the globalized economy; supply chain management focus on understanding basic techniques and strategic issues in the successful movement of products from their origins as raw materials to their final destinations as finished products, including the impact of culture, strategic planning, organization, and management control. Specific topics may include customer service, e-commerce, facilities location, routing and pricing, storage, transportation, emerging technologies, and re-engineering the supply chain. Emphasis will be placed throughout on the maritime component, with frequent use of case studies. Course offered online only. 3 lectures. Formerly TEM 600 at Cal Maritime.

TEM 5610 International Transportation Law (3 units)
Term Typically Offered: F
Prerequisite: Admission to the Transportation and Engineering Management program.

Focused on legal issues in transportation, logistics and supply chain management in the globalized economy. Freight charges liability; loss, damage and delay claims, billing disputes, overcharge and undercharge claims; bills of lading; the freight classification system; cargo insurance; applicable international legal treaties and conventions; and the current state of international transportation law. Course offered online only. 3 lectures. Formerly TEM 610 at Cal Maritime.

TEM 5620 International Trade and Finance (3 units)
Term Typically Offered: F
Prerequisite: Admission to the Transportation and Engineering Management program.

Advanced course of study focusing on trade and finance in a globalized economy. Trade topics include the current structure of the international trading system, global trade treaties and agreements, and the impact of e-commerce on traditional trade constructs. Financial topics covered include raising capital in the global economy; the management of investment and exchange risk; and global financial treaties and agreements. Course offered online only. 3 lectures. Formerly TEM 620 at Cal Maritime.

TEM 5630 Port and Terminal Management (3 units)
Term Typically Offered: SP
Prerequisite: Admission to the Transportation and Engineering Management program.

Advanced course of study dealing with modern port and terminal operations, including logistics processes such as on-dock rail, strategic and tactical planning, harbor drayage, terminal gate protocols, equipment and cargo management, and integration of marine port and terminal operations with other modes of transportation. Introduction to several different types of marine terminals, including containerized liner facilities, dry bulk, and liquid bulk facilities, ro-ro terminals, and others. Course offered online only. 3 lectures. Formerly TEM 630 at Cal Maritime.

TEM 5700 Systems Engineering Management (3 units)
Term Typically Offered: SU
Prerequisite: Admission to the Transportation and Engineering Management program.

Systems Engineering Management introduces students to the principles and processes of systems engineering, from concept development through system integration, testing and life cycle support. Explores a disciplined approach to identifying user needs, translating those needs into a complete system specification, and verifying the requirements are met. A team project related to deployment of a large-scale complex system is used to demonstrate the integrated nature of systems engineering. Course offered online only. 3 lectures. Formerly TEM 700 at Cal Maritime.

TEM 5705 Strategic Management (3 units)
Term Typically Offered: F
Prerequisite: Admission to the Transportation and Engineering Management program.

Focuses on the managing and resolution of complex problems in engineering management. The process of crafting strategy; evaluating a company's external environment; evaluating a company's resources and competitive position; integration and outsourcing; diversification, acquisitions and new ventures; competing in foreign markets; strategy, ethics, and social responsibility; and effective strategy execution. Course offered online only. 3 lectures. Formerly TEM 705 at Cal Maritime.

TEM 5710 Technology Management and Innovation (3 units)
Term Typically Offered: F
Prerequisite: Admission to the Transportation and Engineering Management program.

An advanced course of study focused on the management of technology and innovation in industry. Human: factors; dynamics of technological innovation; formulation and implementation of management strategy; including relevant and current management case studies and simulations designed to increase critical thinking skills while exposing the student to real world scenarios. Course offered online only. 3 lectures. Formerly TEM 710 at Cal Maritime.

TEM 5720 Energy Resource Management (3 units)
Term Typically Offered: SP
Prerequisite: Admission to the Transportation and Engineering Management program.

Focused on energy resource management issues including: Auditing and economic analysis; management control and maintenance systems; sustainability and high performance facilities; alternative energy systems; boilers and fired systems; cogeneration and HVAC systems; lighting and electrical management; natural gas purchasing; utility deregulation and energy systems outsourcing; energy security risk analysis methods; financing energy management projects. Course offered online only. 3 lectures. Formerly TEM 720 at Cal Maritime.

TEM 5800 The Global Humanitarian System (3 units)
Term Typically Offered: SU
Prerequisite: Admission to the Transportation and Engineering Management program.

Consider in greater depth the humanitarian system as a whole and the resulting tensions. Compare and contrast the actions and activities with those found in the commercial and military counterparts that will be found operating alongside the humanitarian logistic network. Focus on the issue of the development and maintenance of inter-personal and inter-organizational trust as a critical success factor within the post-disaster response. Course offered online only. 3 lectures. Formerly TEM 800 at Cal Maritime.

TEM 5810 Rapid and Slow Onset Disaster Management (3 units)
Term Typically Offered: F
Prerequisite: Admission to the Transportation and Engineering Management program.

Introduction to the disaster response cycle and a high-level discussion of the key stakeholders. Consider the role of the humanitarian logistician before discussing five of the most significant challenges facing those working in this field. Course offered online only. 3 lectures. Formerly TEM 810 at Cal Maritime.

TEM 5820 Humanitarian Project Management (3 units)
Term Typically Offered: F
Prerequisite: Admission to the Transportation and Engineering Management program.

On the basis that the whole area of the preparation and response to a natural disaster falls into the Rittel and Webber's categorization of a "wicked problem", based on academic approaches to the "taming" of such problems, this course will consider alternate ways of managing the humanitarian logistic challenge. These will be drawn from a number of fields including those of project management and procurement as well as the area of general management. Course offered online only. 3 lectures. Formerly TEM 820 at Cal Maritime.

TEM 5830 National and International Humanitarian Logistics (3 units)
Term Typically Offered: SP
Prerequisite: Admission to the Transportation and Engineering Management program.

Recognize that there are significant differences in the philosophical approach, and consequential policies, processes and procedures adopted by different countries in their preparation and response to national and international disasters. Consider the differences in such approach, the implications for international cooperation and the extent to which best practice can be synthesized. Course offered online only. 3 lectures. Formerly TEM 830 at Cal Maritime.

TEM 5900 Capstone (3 units)
Term Typically Offered: SP
Prerequisite: Admission to the Transportation and Engineering Management program.

Scope, develop, plan, and execute an in-depth practical project to deliver value in global transportation and/or engineering management, usually for an organization familiar to them. Work in consultation with the course instructor, and usually other faculty and other representatives in a committee selected by the student and instructor. Using knowledge acquired in the program, they devise and present workable solutions to improve some aspects of management and operations in the global business or humanitarian climate of today for their target enterprise. May be taken as a capstone course in a semester, or as a masters' thesis over a longer period, which is appropriate for projects that require more in-depth research and which may yield publishable results. No thesis may take more than six calendar months from its start. A project or thesis is a significant undertaking appropriate to the professional field of supply chain management. It evidences originality and independent thinking, appropriate form and organization, and a rationale. Describes and summarizes it in a written document that includes the project's significance, objectives, methodology and a conclusion or recommendation. Oral presentation in defense of the project to his committee, and possibly to the public. Course offered online only. 3 lectures. Formerly TEM 900 at Cal Maritime.