

FLORIDA ATLANTIC UNIVERSITY™

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 CATALOG _____

Graduate Programs—NEW COURSE PROPOSAL ¹

DEPARTMENT: CIVIL, ENVIRONMENTAL AND
 GEOMATICS ENGINEERING

COLLEGE: ENGINEERING AND COMPUTER SCIENCE

RECOMMENDED COURSE IDENTIFICATION:

PREFIX TTE COURSE NUMBER 6507 LAB CODE (L or C)

(TO OBTAIN A COURSE NUMBER, CONTACT MJENNING@FAU.EDU)

COMPLETE COURSE TITLE: **Transportation and Supply Chain Systems**

EFFECTIVE DATE

(first term course will be offered)

CREDITS ²: 3

TEXTBOOK INFORMATION: Introduction to Logistics Systems Planning and Control, By Giani Gianpaolo, Laporte Gilbert and Musmanno Roberto, John Wiley & Sons, LTD 2004

ISBN: 0111562503

GRADING (SELECT ONLY ONE GRADING OPTION): REGULAR X SATISFACTORY/UNSATISFACTORY

COURSE DESCRIPTION, NO MORE THAN THREE LINES: A study of engineering decision problems for transportation and supply chain systems, relying primarily on the quantitative methods of operations research. Topics include:

- a brief introduction to the components of logistics systems, such as suppliers, customers, inventory, orders, and freight transportation systems, and the interactions between these components;
- thorough coverage of models and solution techniques for the design and control of logistics systems, primarily network

PREREQUISITES *: NONE

COREQUISITES*: NONE

REGISTRATION CONTROLS (MAJOR, COLLEGE, LEVEL)*:

* PREREQUISITES, COREQUISITES AND REGISTRATION CONTROLS WILL BE ENFORCED FOR ALL COURSE SECTIONS.

MINIMUM QUALIFICATIONS NEEDED TO TEACH THIS COURSE: PHD IN ENGINEERING OR CLOSELY RELATED FIELDS

Faculty contact, email and complete phone number:
 EVANGELOS I. KAISAR, PH.D. ASS. PROFESSOR,
 EG-190 (BLDG. 36), ROOM 214
EKAISAR@FAU.EDU
 561-297-4084

Please consult and list departments that might be affected by the new course and attach comments. ³
 No other departments affected.

Approved by:

Department Chair: _____

College Curriculum Chair: _____

College Dean: _____

UGPC Chair: _____

Graduate College Dean: _____

UFS President: _____

Provost: _____

Date:

9/29/14

9/29/14

10/1/2014

10/8/14

10-15-14

1. Syllabus must be attached; see guidelines for requirements: www.fau.edu/provost/files/course_syllabus.2011.pdf

2. Review Provost Memorandum: **Definition of a Credit Hour** www.fau.edu/provost/files/Definition_Credit_Hour_Memo_2012.pdf

3. Consent from affected departments (attach if necessary)

Email this form and syllabus to UGPC@fau.edu **one week before** the University Graduate Programs Committee meeting so that materials may be viewed on the UGPC website prior to the meeting.

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1. Course title/number, number of credit hours	
Transportation & Supply Chain Systems – TTE 6507	3 credit hours
2. Course prerequisites, corequisites, and where the course fits in the program of study	
Prerequisites: None	
3. Course logistics	
<p><i>Term:</i> Summer</p> <p>This is an online lecture course</p> <p><i>Class location and time:</i> TBA</p> <p>Exams will be given only at the scheduled times and places. No make-ups, except in documented emergencies. 15-minute quizzes are randomly given throughout the semester. All communications with the instructor must be conducted via email message or discussion board within Blackboard.</p>	
4. Instructor contact information	
<i>Instructor's name</i>	Dr. Evangelos I. Kaisar, Associate Professor
<i>Office Hours</i>	Engineering West (EG-36) Bldg., Room 214
<i>Office address</i>	M-W: 12:00 -1:00 PM
	T-Th: TBA
<i>Contact telephone number</i>	561-297-4084
<i>Email address</i>	ekaisar@fau.edu
5. TA contact information	
<i>TA's name</i>	TBA
<i>Office address</i>	
<i>Contact telephone number</i>	
<i>Email address</i>	
6. Course description	
<p>A study of engineering decision problems for transportation and supply chain systems, relying primarily on the quantitative methods of operations research. Topics include:</p> <ul style="list-style-type: none"> • a brief introduction to the components of logistics systems, such as suppliers, customers, inventory, orders, and freight transportation systems, and the interactions between these components; • thorough coverage of models and solution techniques for the design and control of logistics systems, primarily network and network-based optimization models; • study in the application of such models and solution techniques. 	
7. Course objectives/student learning outcomes/program outcomes	
<i>Course objectives</i>	<p>I. Ability to conceptualize and solve transportation problems</p> <p>II. Apply operation research techniques for modeling system performance and design of transportation systems.</p> <p>III. Introduce the theoretical concepts of location theory and network design</p> <p>IV. Introduce the supply chain management and port operations.</p>

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	V. To investigate different techniques in transportation systems via class room discussion, problem sets and semester long project.	
<i>Student learning outcomes</i>	<ul style="list-style-type: none"> A. An ability to understand the principles of operation research applied in transportation and supply chain systems. B. An ability to identify the stakeholders involved in freight transportation. C. An ability to explain the role of different modes in transportation. D. An ability to understand and apply simulation techniques. E. An ability to identify key resources to help guide statewide and metropolitan freight planning effort. 	
<i>Relationship to program outcomes</i>	Outcome 1: An understanding of professional and ethical responsibility.	High
	Outcome 2: A working knowledge of fundamentals, engineering tools, and experimental methodologies.	High
	Outcome 3: An understanding of the social, economic, and political contexts in which engineers must function.	Low
	Outcome 4: An ability to plan and execute an engineering design to meet an identified need.	Low
	Outcome 5: An ability to function on multi-disciplinary teams.	Low
	Outcome 6: An ability to communicate effectively.	High
	Outcome 7: Graduates will have proficiency in the following areas of civil engineering: (i) structural engineering, (ii) transportation engineering, (iii) geotechnical engineering, (iv) water resources, and (v) environmental engineering.	High
	Outcome 8: Graduates will have an adequate appreciation for the role of civil engineering in infrastructure planning and sustainability including safety, risk assessment, and hazard mitigation.	Medium
	Outcome 9: Graduates will be successful in finding professional employment and/or pursuing further academic studies.	Medium
8. Course evaluation method		
Homework Assignments:	10%	<i>Note:</i> The minimum grade required to pass the course is C.
Quizzes:	20%	
Midterm Exam/Final Exam:	40%	
Class Project:	30%	
9. Course grading scale		
There is no fixed criteria for the grading scale. The overall performance as related to course objectives and outcomes is evaluated and considered during grading.		
10. Policy on makeup tests, late work, and incompletes		
<i>Makeup tests</i> are given only if there is solid evidence of a medical or otherwise serious emergency that prevented the student of participating in the exam. Makeup exam should be administered and proctored by department personnel unless there are other pre-approved arrangements. As one worst quiz will be dropped, there will be no make-up quizzes.		

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Late work is not unacceptable.
Incomplete grades are against the policy of the department. Unless there is solid evidence of medical or otherwise serious emergency situation incomplete grades will not be given.

11. Special course requirements

None

12. Classroom etiquette policy

1. Cell phones and beepers should have the ringers turned off as a courtesy to the instructor and your fellow classmates.
 2. Computers must be closed and turned off in class
 3. You can leave only on breaks
 4. Exams will be given only at the scheduled times and places. No make-ups, except in documented emergencies. No one is exempt from the final examination.
 5. Attendance to class is required. You are expected to attend and participate in all class sessions. Final grades will be reduced by one letter for every three (3) unexcused absences (as determined by the instructor). Attendance to at least one (1) professional meeting is required.
 6. You are expected to complete the assigned reading prior to the date indicated on the class schedule, to do all homework assignments, and to participate fully in the group projects.
 7. Assignments are due at the beginning of class on the date indicated on the assignment sheet.
- University policy requires that in order to enhance and maintain a productive atmosphere for education, personal communication devices, such as cellular phones and laptops, are to be disabled in class sessions. You are expected to complete the assigned reading prior to the date indicated on the class schedule, to do all homework assignments, and to participate fully in the group projects

13. Disability policy statement

In compliance with the Americans with Disabilities Act (ADA), students who require special accommodations due to a disability to properly execute coursework must register with the Office for Students with Disabilities (OSD) located in Boca Raton campus, SU 133 (561) 297-3880 and follow all OSD procedures.

14. Honor code policy

Consultation with your classmates on assignments is expected and encouraged; however what you turn in must be your own work. Representing the work of others as your own is unethical and may result in sanctions (see the FAU Policy on Academic Honesty). FAU is committed to a policy of honesty in academic affairs. The instructor's duty is to pursue any reasonable allegation, taking action where appropriate, as described in the appropriate section of the FAU Catalog (<http://www.fau.edu/ug-cat/academic.htm#irregular>) and the Florida Administrative Code. Please be advised that the copying of material from the world wide web or any other written material is considered plagiarism and is also a breach of the Honor Code.

Students at Florida Atlantic University are expected to maintain the highest ethical standards. Academic dishonesty is considered a serious breach of these ethical standards, because it interferes with the university mission to provide a high quality education in which no student enjoys unfair advantage over any other. Academic dishonesty is also destructive of the university community, which is grounded in a system of mutual trust and place high value on personal integrity and individual responsibility. Harsh penalties are associated with academic dishonesty. See University Regulation 4.001 at www.fau.edu/regulations/chapter4/4.001_Honor_Code.pdf.

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Regulation 4.001 Code of Academic Integrity

(1) Purpose. Students at Florida Atlantic University are expected to maintain the highest ethical standards. Dishonesty is considered a serious breach of these ethical standards, because it interferes with the University mission to provide a high quality education in which no student enjoys an unfair advantage over any other. Dishonesty is also destructive of the University community, which is grounded in a system of mutual trust and places high value on personal integrity and individual responsibility.

(2) Definitions. The FAU Code of Academic Integrity prohibits dishonesty and requires a faculty member, student, or staff member to notify an instructor when there is reason to believe dishonesty has occurred in a course/program requirement. The instructor must pursue any reasonable allegation, taking action where appropriate. Examples of academic dishonesty include, but are not limited to, the following:

(A) Cheating

1. The unauthorized use of notes, books, electronic devices, or other study aids while taking an examination or working on an assignment.
2. Providing unauthorized assistance to or receiving assistance from another student during an examination or while working on an assignment.
3. Having someone take an exam or complete an assignment in one's place.
4. Securing an exam, receiving an unauthorized copy of an exam, or sharing a copy of an exam.

(B) Plagiarism

1. The presentation of words from any other source or another person as one's own without proper quotation and citation.
2. Putting someone else's ideas or facts into your own words (paraphrasing) without proper citation.
3. Turning in someone else's work as one's own, including the buying and selling of term papers or assignments.

(C) Other Forms of Dishonesty

1. Falsifying or inventing information, data, or citations.
2. Failing to comply with examination regulations or failing to obey the instructions of an examination proctor.
3. Submitting the same paper or assignment, or part thereof, in more than one class without the written consent of both instructors.
4. Any other form of academic cheating, plagiarism, or dishonesty.

(3) Procedures.

(A) If the instructor determines that there is sufficient evidence to believe that a student engaged in dishonesty, the instructor will meet with the student at the earliest possible opportunity and provide notice to the student of the instructor's perception of the

facts, the charges against the student, and the sanction. The instructor may not remove the student from the course until the appeal process has come to a conclusion.

(B) If, after this meeting, the instructor continues to believe that the student engaged in dishonesty, the instructor will provide the student written notice of the charges and the penalty. A copy of this statement shall be sent to the chair of the department or director of the school/program administering the course.

(C) The student is entitled to an opportunity to be heard at a meeting with the instructor and chair/director to review and discuss the instructor's charges/statement. Such request for a meeting must be made in writing and received by the chair/director within five (5) business days of receipt of the instructor's charges/statement. The purpose of the meeting is to discuss the facts and to advise the student of the appeal process. The chair/director will provide the student, the instructor, and the dean of

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the college administering the course a summary of both the student's position and the instructor's position.

(D) The student may appeal in writing to the dean of the college administering the course. The appeal must be received by the dean within five (5) business days of receipt of the chair/director's summary from the review meeting. The dean will convene a Faculty-Student Council ("Council"), which will be composed of the dean (or designee), two faculty members, and two students. The dean (or designee) will act as chair of the Council, direct the hearing, and maintain the minutes and all records of the appeal hearing, which will not be transcribed or recorded. The hearing is an educational activity subject to student privacy laws/regulations, and the strict rules of evidence do not apply. The student may choose to be accompanied by a single advisor, but only the student may speak on her/his own behalf. The student and instructor may present testimony and documents on his/her behalf. Additional witnesses may be permitted to speak at the dean's (or designee's) discretion and only if relevant and helpful to the Council. The Council will deliberate and make a recommendation to the dean to affirm or void the instructor's findings of academic dishonesty. The dean (or designee) will inform the student and instructor in writing of his/her findings of academic dishonesty after receipt of the Council's recommendation.

(E) The student may request an appeal in writing of the dean's findings of academic dishonesty to the University Provost (or designee) and include relevant documentation in support of such appeal. The University Provost (or designee) will notify the student, dean, and instructor of his/her decision in writing. This decision by the Provost (or designee) constitutes final University action.

(F) If there is a finding that the Code of Academic Integrity has been violated, the chair will notify the University Registrar that the following notation be included on both the student's official transcript and on the student's internal record: "Violation of Code of Academic Integrity, University Regulations 4.001." If such violation is appealed and overturned, the dean or University Provost (or their designees) will notify the University

Registrar that such notation should be removed from the student's transcript and internal record.

(4) Penalties.

(A) The instructor will determine the penalty to be administered to the student in the course. Penalty grades cannot be removed by drop, withdrawal, or forgiveness policy. Students should be aware that, in some Colleges/programs, failure in a course or a finding of dishonesty may result in other penalties, including expulsion or suspension from the College/program.

(B) In the case of a first offense, the student may elect to complete a peer counseling program administered by the Division of Student Affairs by the end of the semester following the semester in which the dishonesty occurred. Upon successful completion of this program, the notation regarding violation of the Code of Academic Integrity will be expunged from the student's official transcript. The grade, however, will remain unchanged and cannot be removed by drop or forgiveness policy. Also, the notation will remain in internal University student records.

(C) In the case of a repeat offense, even if the notation of violation of the Code of Academic Integrity from the first offense had been expunged from the official transcript as a result of successful completion of the peer counseling program, the student will be expelled from the University.

Specific Authority: Article IX of the Florida Constitution, 1001.706, 1001.74 F.S., Board of Governors Regulations 1.001, 6.010, and 6.0105. History—New 10-1-75, Amended 12-17-78, 3-28-84, Formerly 6C5-4.01, Amended 11-11-87. Formerly 6C5-4.001. Amended 5-26-10

See University Regulation 4.001 at www.fau.edu/regulations/chapter4/4.001_Honor_Code.pdf.

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15. Required texts/reading	
1. Ghiani, Gianpaolo; Laporte, Gilbert; and Musmanno, Roberto, <i>Introduction to Logistics Systems Planning and Control</i> , John Wiley & Sons, 2004: <i>This text is highly recommended as reference for the modeling content in the course.</i> 2. Handouts provided by instructor	
16. Supplementary/recommended readings	
3. Winston, W.I., "Operation Research, Applications and Algorithms", 4th Edition, Thomson,, 2006. 4. <i>Assigned readings from academic journals.</i>	
17. Course topical outline, including dates for exams/quizzes, papers, completion of reading	
Date	Topic
May 15	Administrative, Overview Goals and Introduction
Module 1	
Objectives	Ability to conceptualize and solve freight transportation problems
Outcomes	An ability to understand the principles of operation research applied in freight transportation and supply chain systems. An ability to understand the multi-objective analysis tools
Assessment	Class Quizzes, Assignments, Test(s), Class Project
Week 1	Modes and Modal Choice Optimization Training
Week 2	Introduction to the Supply Chain Systems LINDO/LINGO
Week 3	Logistic Network Design Fundamentals CPLEX/OPL
Module 2	
Objectives	Apply operation research techniques for modeling system performance and design of transportation systems.
Outcomes	An ability to understand and apply simulation techniques An ability to understand the multi-objective analysis tools
Assessment	Class Quizzes, Assignments, Test(s), Class Project
Week 4	Freight Transportation in a Supply Chain Freight Transportation Mode Selection
Week 5	Freight Transportation and ITS, Logistics Operations Basic forecasting using statistical techniques <i>Most logistics decisions require estimates of future requirements. What basic forecasting techniques are used to develop these estimates?</i>
Module 3	
Objectives	Introduce the supply chain management and port operations.
Outcomes	An ability to understand linear programming techniques and location theory. An ability to understand the multi-objective analysis tools An ability to understand and apply simulation techniques. An ability to work with peers in project teams to deal with real world problems.
Assessment	Class Quizzes, Assignments, Test(s), Class Project

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Week 6	Ports, Principles of Distributions Centers/Warehouse Design
Week 7	Transportation and Distribution Technology Transportation Planning
	Module 4
Objectives	To investigate different techniques in transportation systems via class room discussion, problem sets and semester long project.
Outcomes	An ability to understand the multi-objective analysis tools An ability to understand and apply simulation techniques. An ability to work with peers in project teams to deal with real world problems.
Assessment	Class Quizzes, Assignments, Test(s), Class Project
Week 8	Inventory Issues
Week 9	Supply Chain Design Strategy and Technology
Week 10	Case Studies Assignment #3
Week 11	Logistics in Industry
	Final Exam (TBA)