FLORIDA ATLANTIC UNIVERSITY

COURSE CHANGE REQUEST
Graduate Programs

Department CEGE

College CoE&CS

UGPC Approval _____
UFS Approval _____
SCNS Submittal _____
Confirmed _____
Banner Posted _____
Catalog _____

***Current* Course Prefix and Number**	TTE5501	***Current* Course Title**	Transportation System Analysis

*Syllabus must be attached for **ANY** changes to current course details. See Guidelines. **Please consult and list departments** that may be affected by the changes; attach documentation.*

Change title to:

Change prefix
From: **To:**

Change course number
From: 5501 **To:** 6501

Change credits*
From: **To:**

Change grading
From: **To:**

*Review Provost Memorandum

Change description to:

Concepts of operations research using various models to optimize holistic operations of transportation systems from the perspectives of sustainability, resilience, environmental impacts, and robustness. Programming model development and optimizations based on mathematical interpretations of descriptive problems.

Change prerequisites/minimum grades to:

Change corequisites to:

Change registration controls to:

Please list existing and new pre/corequisites, specify AND or OR and include minimum passing grade.

Effective Term/Year for Changes:	Spring 2020	**Terminate course? Effective Term/Year for Termination:**	

Faculty Contact/Email/Phone David Kan/kanx@fau.edu/7-2658

Approved by	***Date***
Department Chair	10/1/2019
College Curriculum Chair	10/1/2019
College Dean	10/4/2019
UGPC Chair	
UGC Chair	
Graduate College Dean	
UFS President	
Provost	

Email this form and syllabus to UGPC@fau.edu one week before the UGPC meeting.

Department of Civil Environmental and Geomatics Engineering
Florida Atlantic University
Course Syllabus

1. Course title/number, number of credit hours	
TTE 6501 - Transportation System Analysis	3 credit hours

2. Course prerequisites, corequisites, and where the course fits in the program of study

3. Course logistics

Term: Spring 2020
This is a classroom lecture course.
Class location and time: T 7:10 PM -10:00 PM (Lecture) Computing Bldg-125
Credit hour assignments: Lectures – 15 weeks, 180 minutes each week;
Homework assignments – 12 weeks, about 180 minutes each week;
Class project – 12 weeks, 120 minutes each week;
Total in-class instruction per credit hour: **1 hour per week, for 15 weeks**
Total out-of-class assignments per credit hour: **1 hour and 20 minutes per week, for 15 weeks**

4. Instructor contact information

Instructor's name	Dr. David Kan, Assistant Professor
Office address	Engineering West (EG-36) Bldg., Room 225
Office Hours	T, TH 10:00 AM – 12:00 PM
Email address	kanx@fau.edu

5. TA contact information

TA's name	----
Office address	----
Office Hours	----
Email address	----

6. Course description

Concepts of operations research using various models to optimize holistic operations of transportation systems from the perspectives of sustainability, resilience, environmental impacts, and robustness. Programming model development and optimizations based on mathematical interpretations of descriptive problems.

7. Course objectives/student learning outcomes/program outcomes

Course objectives	I. Introduce students to the fundamental concepts of linear programming, simplex method, and duality theory. II. Develop students' ability to solve network optimization problems including minimum cost problems, maximum flow problems, minimum path problems, shortest spanning tree problems, etc. III. Develop student's ability to solve project management, decision analysis, and queuing theory and inventory theory applications. IV. Prepare students for engineering work in analysis, design, modeling and operation of transportation systems within the context of environmental sustainability.

8. Course evaluation method

Midterm Exams:	20%	*Note*: The minimum grade required to pass the course is C.
Class Project:	20%	
Final Exam:	20%	

Homework Assignments:	40%	

9. Course grading scale

There is not any 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

Makeup tests 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.
Late homework submissions will get (if 100% correct) only 75% of the original points. *Late class project submissions* are 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.
Assignments are submitted **electronically through CANVAS** and they are always due by 11:00 AM on Fridays (when our Friday classes start). Assignments can be written manually and scanned as a pdf file; or they can be developed in word processing programs (or spreadsheets) and converted to pdf files. **Each assignment should be submitted as a SINGLE pdf file through CANVAS**. Late assignments will be accepted but with a penalty – they will be given only 75% of the earned score. **No assignments will be accepted through any other means (email, in-hand, etc.) except through CANVAS**.
Class Project is submitted **electronically as a SINGLE pdf file through CANVAS**. Late submissions will be accepted but with a penalty – they will be given only 75% of the earned score. **Lab projects will not be accepted through any other means (email, in-hand, etc.) except through CANVAS**.

11. Special course requirements

None

12. Classroom etiquette policy

University policy requires that in order to enhance and maintain a productive atmosphere for education, personal communication devices, such as cellular phones and laptops, should not be used for outside-of-class activities.

13. Attendance policy statement

Students are expected to attend all of their scheduled University classes and to satisfy all academic objectives as outlined by the instructor. The effect of absences upon grades is determined by the instructor, and the University reserves the right to deal at any time with individual cases of non-attendance.
Students are responsible for arranging to make up work missed because of legitimate class absence, such as illness, family emergencies, military obligation, court-imposed legal obligations or participation in University-approved activities. Examples of University-approved reasons for absences include participating on an athletic or scholastic team, musical and theatrical performances and debate activities. It is the student's responsibility to give the instructor notice prior to any anticipated absences and within a reasonable amount of time after an unanticipated absence, ordinarily by the next scheduled class meeting. Instructors must allow each student who is absent for a University-approved reason the opportunity to make up work missed without any reduction in the student's final course grade as a direct result of such absence.

14. Disability policy statement

In compliance with the Americans with Disabilities Act Amendments Act (ADAAA), students who require

reasonable accommodations due to a disability to properly execute coursework must register with Student Accessibility Services (SAS) and follow all SAS procedures. SAS has offices across three of FAU's campuses – Boca Raton, Davie and Jupiter – however disability services are available for students on all campuses. For more information, please visit the SAS website at www.fau.edu/sas/.

15. Honor code policy

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 http://www.fau.edu/regulations/chapter4/4.001_Code_of_Academic_Integrity.pdf

16. Counseling and Psychological Services (CAPS) Center

Life as a university student can be challenging physically, mentally and emotionally. Students who find stress negatively affecting their ability to achieve academic or personal goals may wish to consider utilizing FAU's Counseling and Psychological Services (CAPS) Center. CAPS provides FAU students a range of services – individual counseling, support meetings, and psychiatric services, to name a few – offered to help improve and maintain emotional well-being. For more information, go to http://www.fau.edu/counseling/

17. Required texts/reading

"Introduction to Operations Research", Hillier and Lieberman, 2010, 9th Edition, McGraw Hill

18. Supplemental material

None

19. Course topical outline, including dates for exams/quizzes, papers, completion of reading

Lectures	
Date	*Topic*
Week 1	Introduction to Linear Programming
Week 2	SIMPLEX Method
Week 3	Duality Theory & Sensitivity Analysis
Week 4	Network Equilibrium and Traffic Assignment
Week 5	Dynamic Programming & Integer Programming
Week 6	Network Optimization Models
Week 7	*Mid Term Exam*
Week 8	Non linear Programming & Metaheuristics
Week 9	Spring Break
Week 10	Queuing Theory
Week 11	Inventory Theory
Week 12	Project Management and Decision Analysis
Week 13	Reliability Theory
Week 14	Markov Chains
Week 15	Transportation Economics
Week 16	Forecasting and Travel Demand Modeling
Final Exam Week	*Final Exam*

Lectures, Exams, Holidays

19. Course topical outline, including dates for exams/quizzes, papers, completion of reading

(continued)	
Assignments	
Date	*Topic*
Week 1	None
Week 2	Assignment 1 given;
Week 3	Assignment 2 given; Assignment 1 due
Week 4	Assignment 3 given; Assignment 2 due
Week 5	Assignment 4 given; Assignment 3 due
Week 6	Assignment 5 given; Assignment 4 due
Week 7	Mid-Term Exam; Assignment 5 due
Week 8	Assignment 6 given;
Week 9	Spring Break
Week 10	Assignment 7 given; Assignment 6 due
Week 11	Assignment 8 given; Assignment 7 due
Week 12	Assignment 9 given; Assignment 8 due
Week 13	Assignment 10 given; Assignment 9 due
Week 14	Assignment 11 given; Assignment 10 due
Week 15	Assignment 12 given; Assignment 11 due
Week 16	Assignment 12 due