UC 12732 13F

APPROVED APR 23 2014

RECEIVED DEC 06 2013

Memorandum

To: University Committee

From: Cullen College of Engineering & C.T. Bauer College of Business
Graduate and Professional Programs, MBA office

Date: December 6, 2013

Re: Proposal for joint BS/MBA program between the Cullen College of Engineering and C.T. Bauer College of Business

Dean's Signature: _____ Date: 06 DEC 2013
David P. Shattuck

The Graduate and Professional Programs office (GPP) respectfully asks that faculty consider and approve the creation of a joint BS/MBA program to be offered in conjunction with the UH Cullen College of Engineering.

The rationale underlying the creation of this program is that both the Bauer College of Business and the Cullen College of Engineering can benefit from attracting higher quality students. The proposed program will be academically rigorous, rare in the marketplace and efficient with respect to time to completion, all of which are intended to make our respective colleges more appealing to high quality applicants.

The first Engineering area to be considered is *Industrial Engineering*. All courses mentioned in this document and any academic considerations relate to Industrial Engineering only. Other engineering specialties (mechanical/electrical/petroleum/civil/etc.) could participate in a similar program upon the approval of their respective faculties and the faculty of the Bauer College of Business.

Working together for the preparation of this submission, the colleges envision the joint program operating as follows:

Applicants

- Applicants would apply to and gain admission to this joint program after the completion of key first-semester sophomore year courses in Engineering. Typically students will apply and be admitted into the program during their sophomore year. Admission to the MBA program will be conditional on successful completion of the Engineering curriculum, on maintaining a cumulative GPA of 3.0 or better, and on meeting the requirements in the next bulleted item.

- Applicants shall take all standardized tests in advance of entry as required by the respective colleges including but not limited to the GMAT for the Bauer College of Business. It is expected that applicants will complete the GMAT with a score of 600 or better before the end of their senior year. Students who do not have English as their first language will need to demonstrate appropriate English communication skills to the satisfaction of the Bauer College of Business before beginning the senior year.

- Applicants will be chosen on the basis of:
  - Standardized test scores
  - Academic performance in courses at UH; a cumulative GPA of 3.25 or higher is currently being proposed as the threshold
  - Demonstrated potential for success in both programs
  - Personal interview with faculty/administrators from both colleges

Admitted Students

- Once admitted, students will first pursue the engineering program of their choice on a full-time basis (path to be delineated).

- Students will participate in three internships while pursuing the engineering program. It is anticipated that these internships will take place in the summers after the sophomore, junior, and senior years. The Career Centers of the Bauer College of Business and the Cullen College of Engineering will work together to arrange appropriate internships.

- Upon satisfactory completion of the Engineering curriculum students will enter immediately in the Full-time day MBA program of the Bauer College of Business.

Time to Completion

- Time to completion for both degrees in estimated to be as little as 5 years after enrolling at UH. The MBA would be completed during the 12 months after starting. The normal time to degree for the full-time MBA is 18 months under the new curriculum.

Course Replacement/Acceptance

- The Cullen College of Engineering agrees to replace 6 hours of certain Engineering coursework with MBA courses, with a view to facilitating the overall time to completion goal for these students. We propose that these courses be Financial Accounting (ACCT 6331) and Managerial Analysis (FINA 6387)

- The C.T. Bauer College will waive 6 credit hours of coursework for students enrolled in this program. To this end students will successfully complete:

  - **INDE 3364 – Engineering Statistics II in place of STAT 6360 (Note that since INDE 2333 - Engineering Statistics I is a prerequisite**

for INDE 3364, the student will take 6 hours of statistics in lieu of 3 hours of STAT 6360 at Bauer)

and two other courses from the following list of required courses in INDE:

- INDE 3310 – Statistical Quality Control
- INDE 3330 – Financial and Cost Management
- INDE 3333 – Engineering Economy I
- INDE 3381 – Linear Optimization
- INDE 4315 – Supply Chain Design and Management

- Sample Industrial Engineering syllabi are included at the end of this document.

Awarding of Degrees

- The degrees will be awarded sequentially. On successful completion of the undergraduate program and on receiving the BS in Industrial Engineering degree, students in this joint program who meet the conditions stated above will be admitted to the MBA program at the Bauer College.

Tuition, Fees and other Activities

- The Colleges will set their own tuition and fees and collect same for their benefit.

  Beyond tuition and fees the College's agree to work together and to share the expense of creating a support network for students enrolled in this joint program including without limitation the provision of career services, meetings with and preparation for meetings with prospective employers, professional development opportunities that parallel the academic programs and such other benefits as the parties agree upon.

Sample Degree Plan

FIRST YEAR

Fall Semester	Hours
CHEM 1372. Fundamentals of Chemistry for Engineers	3
CHEM 1117. Fundamentals of Chemistry for Engineers Laboratory	1
ENGL 1303. First Year Writing	3
HIST 1376 or **1377**. The United States to 1877	3
MATH 1431. Calculus I	4
Humanities Core Course	3
Total	**17**

Spring Semester	Hours
INDE 1331. Computing for Engineers	3
ENGL 1304. First Year Writing II	3
HIST 1378 or **1379**. The United States since 1877	3
MATH 1432. Calculus II	4
PHYS 1321. University Physics I	3
Total	**16**

SECOND YEAR

Fall Semester	Hours
INDE 2333. Engineering Statistics I	3
INDE 3330. Finance and Cost Management	3
MATH 2433. Calculus III	4
PHYS 1322. University Physics II	3
INDE 2331. Computer Applications for Industrial Engineers	3
Total	**16**

Spring Semester	Hours
MECE 3400. Introduction to Mechanics	4
ENGI 2304. Technical Communications	3
INDE 3333. Engineering Economy I	3
POLS 1336. U.S. and Texas Constitutions and Politics	3
MATH 3321. Engineering Math	3
Total	**16**

An internship will follow this second year.

THIRD YEAR

Fall Semester	Hours
INDE 3382. Stochastic Models	3
INDE 3364. Engineering Statistics II	3
INDE 3432. Manufacturing Processes	4
INDE 3310. Statistical Process Quality Control and Improvement	3
POLS 1337. U.S. and Texas Constitutions and Politics	3
Total	**16**

Spring Semester	Hours
INDE 3362. Computer Aided Design/Manufacturing	3
INDE 4331. Analysis of Industrial Activities	3
INDE 4369. Facilities Planning and Design	3
INDE 3381. Linear Optimization	3
Visual and Performing Arts Course	3
Total	**15**

An internship will follow this third year.

FOURTH YEAR

Fall Semester	Hours
INDE 4370. Discrete Event Simulation	3
INDE 4111. Industrial Engineering Seminar	1
INDE 4320. Computer-Integrated Manufacturing	3
ECE 3336. Introduction to Circuits and Electronics	3
ACCT 6361. Financial Accounting	**3**
Social Sciences Core Course	3
Total	**16**

Spring Semester	Hours
INDE 4315. Supply Chain Design and Management	3
INDE 4334. Engineering Systems Design	3
INDE 4337. Human Factors and Ergonomics	3
INDE 4372. Operations Control	3
FINA 6387. Managerial Analysis	**3**
Total	**15**
BS Degree Total:	**127**

An internship will follow this fourth year.

Sample Degree Plan (continued)
FIFTH YEAR - MBA PROGRAM

Fall Semester – sessions 1 and 2	**Hours**
FINA 6A35. Managerial Finance	1.5
SCM 6A01. Production and Operations Management	1.5
MARK 6A61. Marketing Communication	1.5
GENB 6A50. Business Communication	1.5
MANA 6A83. Strategic Management	1.5
MBA xxxx. MBA elective	3
MBA xxxx. MBA elective	3
MBA xxxx. MBA elective	3
Total	**16.5**
Spring Semester – sessions 1 and 2	
MIS 6A41. Information Systems	1.5
MANA 6A25. Ethical Leadership and Critical Reasoning	1.5
MANA 6A33. Organizational Behavior & Management	1.5
MBA xxxx. MBA elective	3
MBA xxxx. MBA elective	3
MBA xxxx. MBA elective	3
MBA xxxx. MBA elective	3
Total	**16.5**
Summer Semester – sessions 1 and 2	
MBA xxxx. MBA elective	3
Internship (recommended)	
Total credit during MBA fifth year	**36**

Double-Counted Courses

ACCT 6361. Financial Accounting	3
FINA 6387. Managerial Analysis	3
INDE 2333. Engineering Statistics I (prerequisite for INDE 3364)	
INDE 3364. Engineering Statistics II (substitutes for **STAT 6360**)	3
INDE xxxx. Industrial Engineering elective (3 credit hours counts as 1.5)	1.5
INDE xxxx. Industrial Engineering elective (3 credit hours counts as 1.5)	1.5
Total double-counted courses	**12**
Total credit counted toward MBA	**48**

Blue courses are MBA core

Note that MBA electives can be 1.5 or 3 credits. The outline above is one example of how the electives may be structured. Students can also take the 3 credit electives.

Engineering Syllabi
Proposed for substitution for Six Hours of MBA Elective Credit

Proposed BS/MBA Program

BS Industrial Engineering
Course Syllabi

INDE 2333- Engineering Statistics I

Designation: Required Course

Description: This course introduces engineering majors to the field of probability & statistics and to basic engineering applications employing techniques from this field. A variety of models are presented with the intent of exposing students to foundational elements which will assist them in analyses requiring probability calculations, data analysis, parameter estimation, and tests of hypotheses.

Prerequisites: None

Textbook(s):
1. Probability & Statistics for Engineers (6^{th} edition) by R.A. Johnson

Course Objectives:

The goal of the course is to establish a strong foundation for dealing with basic engineering problems of a stochastic nature. Specific course objectives supporting this goal include: Data analysis and summary representations; use of probability axioms, laws and relationships in computing event probabilities; recognition and application of models based on common discrete and continuous distributions; calculation of system reliability for components in series, parallel and for hybrid-structured systems; sampling distributions and point and interval estimation; and statistical tests of hypotheses.

Expected Program Outcomes:

(a) An ability to apply knowledge of mathematics, science, and engineering

(b) An ability to design and conduct experiments, as well as to analyze and interpret data

(e) An ability to identify, formulates, and solves engineering problems

Topics Covered:

Frequency histograms; sample means and variances, random variables and sample spaces, events and set theory; counting principles, probability axioms; theorems and computation concepts; probability tree diagrams, discrete distributions: generic p.d.f.'s; population means and variances, binomial, and hyper geometric; Poisson and geometric distributions; continuous distributions: generic p.d.f.'s; population means and variances, uniform, normal and exponential distributions; system reliability; joint distributions; mathematical expectation and basic decision-making; sample statistics and sampling distributions; estimation and confidence intervals; hypothesis testing: means and variances and goodness of fit.

Schedule:
Monday and Wednesday 10:00 – 11:30 AM

Information about the course:

Grading:

- Average of home works and quizzes; no dropping of any grades 15%
- 3 major exams 75%

Special Notes:

- Homework is due at the beginning of class on the due date. Homework turned in after the first 15 minutes of class on the due date is late and will be counted off 10 points. Homework turned in the day after the due date loses 50 points. Homework more than one day late is not accepted.
- Attendance is extremely important (if you want to pass). Persons with multiple absences or tardiest will be assumed not to be serious about the course and will be treated accordingly. Pop quizzes may be given to encourage regular attendance.
- It is not a good idea to miss a major exam. Make-up tests may be longer and more difficult.

Instructor:

Marvin Karson, Ph. D.
Room: E208-D3
Phone: 713-743-4189
E-mail: mjkarson@wt.net

INDE 3310- Statistical Quality Control

Designation: **Required Course**

Description: Probability theory, concepts of random variable, exception, variance, probability distribution, statistical test and inference. Statistical process quality control. Total Quality Control and Six Sigma.

Prerequisites: INDE1331

Textbook(s):
Introduction to Quality Control, 6th Edition, Douglas C. Montgomery, 2009, John Wiley & Sons, Inc.

Course Objectives:
This course will provide a solid foundation in statistical quality control (SQC) and show how it fits in the Industrial Engineering "tool bag". Total Quality Management and Six Sigma will also be presented to provide context for SQC and to illustrate its importance to business and industry.

Expected Program Outcomes:

(a) An ability to apply knowledge of mathematics, science, and engineering

(b) An ability to design and conduct experiments, as well as to analyze and interpret data

(e) An ability to identify, formulates, and solves engineering problems

Attendance and Grading Policy:
Class meets MW 1:00-2:30 pm from August 23 through December 1 (exceptions noted on class calendar.) Roll will be taken at the beginning of each class. Absences will be excused only with a doctor's note in case of illness or for a death in the family. Each student will be allowed a maximum of three unexcused absences. Each unexcused absence above three will result in a decrease of 5 points from your final grade (on a 100 point scale.)

Homework will be assigned once a week. Answers will be provided, but work will not be graded. A quiz will be given once a week based on the homework assignment. Any quiz missed will result in a zero grade, but you will be allowed to drop one quiz grade. In the case of illness, another quiz will be offered if the student provides a doctor's excuse at the next class session that you are able to attend.

There will be two tests and a comprehensive final exam. You will receive at least one week notice before exams. The final exam is scheduled for December 10. Permission for any make-up exam may be granted in only unusual situations such as (1) death in family and (2) hospitalization which requires a doctor's note. (A special make-up exam (if allowed) will be given during the final examination period.) Emergencies need to be addressed with the instructor as soon as possible.

Grading Scale:
Grades will be weighted as follows:

Quizzes:	15%
Exam 1:	25%
Exam 2:	25%
Final Exam:	35%

Grades will be calculated using the above weights and a 10-point grading scale:

90-100 = A
80-89.99 = B
70-79.99 = C
60-69.99 = D
<60 = F

There will be no curve, no rounding, and no exceptions.

Etiquette Policy:

Please respect your instructor and fellow students by turning your cell phone off during class. If your phone rings in class, you will be asked to take the call outside and not return to class. (This will count as one of your unexcused absences.) Please make every effort to be on time to class.

Please show respect by not wearing baseball caps or hats in class (with the exception of those who have medically related hair loss.)

Class participation is encouraged - ask questions, provide examples that you are familiar with, show some interest!

Special Accommodations for Students with Disabilities:

Students requiring special accommodations should make an appointment to discuss the accommodation memo during my office hours as soon as possible. If scheduled office hours conflict with classes, please arrange an alternate appointment time. If you do not have an accommodation memo, but need special accommodations, please contact the university.

Instructor:

Victoria Jordan, PhD, MS, MBA
Director, Quality Measurement and Engineering
MD Anderson Cancer Center
1515 Holcombe Avenue
Houston, TX 77030
713-745-2588

INDE 3315 – Supply Chain Management

Designation: Required Course

Prerequisites: INDE 3381

Description: Topics covered include the design of transportation and logistics networks, facility location, and inventory and demand management, value of information, distribution channels coordination, global supply chain, and information technology.

Course Objectives: This course is intended to familiarize undergraduate students with strategic and operational challenges related to the design and management of supply chains. The course addresses a wide variety of issues concerned with the design of the distribution channels, and the flow of material and information through the supply chain.

Expected Program Outcomes:

a) An ability to apply knowledge of mathematics, science, and engineering
b) An ability to design and conduct experiments, as well as to analyze and interpret data
c) An ability to design a system, component, or process to meet desired needs within realistic constraints such as economic, environmental, social, political, ethical, health and safety, manufacturability and sustainability
d) an ability to identify, formulates, and solves engineering problems

Schedule:
Monday-Wednesday 2:30 pm - 4:00 pm, E225 Engineering Building 2

Text Book:
Production and Operations Analysis, by S. Nahmias, McGraw-Hill, 6th Edition

Grading:

Homework: All homework assignments will be required. They will be posted on the course website with associated due dates. Homework is due at the beginning of class. Late assignments carry no credit. Depending on their length and difficulty, the total number of points in each homework might vary. Collaboration towards its solution is strongly encouraged, but each student must turn in his/her own written solutions in his/her own words; photocopies will not be accepted. (An exception to this is a project, in which case you might be assigned to a group and turn in a single project report for the group.) Should some submitted homework assignments be identical or suspected to be identical, all involved parties will get a grade of "0" on the particular homework assignment. Homework is meant to be a learning tool. If you are having difficulty, find help right away; don't wait until you fall even further behind! Good sources of help are fellow students, teaching assistant, and I. None of the homework will be dropped, so please make every attempt to submit all homework assignments on time. No extra credit will be given for extra work and/or redoing assignments.

Exams: There will be two exams. The first exam will be on March 10 and the second exam will be on May 3. Exams will be closed book, closed notes and must be done individually. You are allowed to bring one page of notes (single sided) to the exams which you have to turn in after the exam. You will not be allowed to use programmable/graphical calculators during the exams.

Grading Policies: Homework Assignments/Projects: 40%
Exams: 30% each

Rules and Policy:

Announcements: Students are responsible for all announcements made in class and for all changes in the schedules that are posted on the class website.

Re-grades: You may submit an assignment or an exam for a re-grade within a one-week period of its return date. Re-grade requests are not accepted after this time limit.

Make-ups: Students who plan to miss a lecture are encouraged to notify the instructor prior to the lecture date. According to the University Policy, a makeup examination will be administered only if the instructor is furnished with written evidence that a student is:

1. Participating in an activity appearing on the University Authorized Activity List and must be preceded by authorized, written notice.
2. Confined to home or bed by physician on account of illness. (A card from the health center saying that you visited the health center does not count. I need to see a report which clearly states that you were not in a physical condition to take the exam at the scheduled date/time.)
3. Bereaved by a death in his/her immediate family.
4. Participating in legal proceedings that require his/her presence.

Academic Dishonesty: Academic misconduct is not tolerated at University of Houston. In case of violations, the instructor reserves the right to take the appropriate action to ensure a fair grade policy. In addition, violations will be dispatched in accordance with the university policy.

Students with Disabilities: Any student with documented physical, cognitive or learning disabilities covered by the University's Services for Students with Disabilities should notify the instructor within the first week of classes. Students are responsible to specify exam accommodations that are needed by showing their Student Accommodations Form (SAF) to instructor and must also have the instructor complete the Request for Individualized Testing Accommodations (RITA) Form.

Classroom Conduct: To ensure a smooth lecture, students are required to turn off completely their cellular phones (no vibrating mode) as well as any other electronic device (unless instructed otherwise) at the beginning of each lecture. Any student failing to meet these requirements will be asked to leave the classroom

Instructor:

Ali Ekici
Room: E221A-D3
Phone: 713-743-4127

E-mail: aekici@wt.net

INDE 3330 – Financial and Cost Management

Designation: Required Course

Description: Methods to collect, organize, present, interpret, and control costs in industrial enterprises.

Prerequisites: None

Textbook(s):

1. *Cost Accounting – A Managerial Emphasis,* 11th Edition, by Charles T. Horngren, George Foster, Srikant M. Datar, Prentice Hall, ISBN 0-13-60554-4.

Course Objectives:

The primary objectives of this course are:

1. To learn the methods for collecting, organizing, presenting, interpreting, and controlling costs in industrial enterprises, and
2. To explore how cost accounting can help managers make better decision.

Expected Program Outcomes:

(a) an ability to apply knowledge of mathematics, science, and engineering

(b) an ability to design and conduct experiments, as well as to analyze and interpret data

(c) an ability to design a system, component, or process to meet desired needs within realistic constraints such as economic, environmental, social, political, ethical, health and safety, manufacturability and sustainability

(e) an ability to identify, formulates, and solves engineering problems

Topics Covered:

Specific subjects to be covered in this course include:

1. Cost accounting fundamentals
2. Tools for planning and control
3. Cost information for decision

Schedule:

Tuesday and Thursday 1:00 PM – 2:30 PM

Information about the course:

Grading:

1. Exam 1: 100 points

2. Final Exam: 100 points
3. Homework Assignment: 200 points
4. Class Attendance: 25 points

Total Points: 425 points

Exams: The individual closed-note, closed-book exams will be predominately short-answer type questions.

Class Assignment: Late class assignments will not be accepted.

Class Attendance: You are expected to attend class and sign attendant sheet.
Class attendance will be tallied.

Makeups: No makeup exams will be given.

Honesty: The University's academic honesty policy is in effect. Unless otherwise specified all homework and exams are to be completed individually.

Changes: This syllabus may change due to extenuating circumstances.

Instructor:

Thomas Chen, Ph. D.
Room: E210-D3
Phone: 713-743-4198
E-mail: tcchen@uh.edu

INDE 3333- Engineering Economy I

Designation: Required Course

Description: This course intends to provide students with tools necessary to evaluate, measure, and compare capital investments. The course also demonstrates how mathematical techniques can be employed by decision makers in developing a more objective and sound solution.

Prerequisites: None

Textbook(s):
1. G. T. Stevens, Jr., *The Economic Analysis of Capital Expenditures for Managers and Engineers*, Pearson Custom Publishing, 1994, ISBN: 0-536-58346-3.

Course Objectives:

Upon completion of this course, students should be able to understand the concept of the time value of money and equivalence. They will also be able to generate components of the annual cash flow including gross income, costs of goods sold, interest and principal payments, capital recovery methods, borrowed money, and working capital. Other objectives of the course include an in-depth knowledge of single project evaluation methods including, net present value analysis, internal rate of return, payback period, and benefit cost ration. Students will also be able to effectively utilize breakeven points, multiple project evaluation/capital budgeting, and cost comparisons concepts to determine the economic desirability of any industrial projects.

Expected Program Outcomes:

(a) an ability to apply knowledge of mathematics, science, and engineering

(b) an ability to design and conduct experiments, as well as to analyze and interpret data

(e) an ability to identify, formulates, and solves engineering problems

Topics Covered:

Interest and Interest factor, Depreciations, tax considerations, economic evaluation of project, capital budgeting, break even analysis and cost comparisons.

Schedule:

4:00 -6:00 pm Tuesday and Thursday

Information about the course:

Grading Policy

First exam	100 points
Second Exam	100 points
Final Exam	100 points
Homework	50 points
Unannounced quizzes	50 points

Exams:

Three exams (including final exam) will be administered. The exams are open book and open notes. There will be no makeup exams. Late homework will not be accepted or graded.

Instructor:

Hamid R. Parsaei, Ph.D., P.E.
Professor and Chairman
Department of Industrial Engineering
Cullen College of Engineering
Phone: (713) 743-6041
FAX: (713) 743-4190
Email: parsaei@uh.edu

INDE 3364- Engineering Statistics II

Designation: Required Course

Description: Probability review, statistical inference, confidence interval, hypothesis testing, analysis of variance, design of experiments, simple and multiple linear regression, and applications to engineering problems.

Prerequisites: INDE 2333 or consent of instructor

Textbook(s): Montgomery, D.C., and Runger, G.C. (2007). Applied Statistics and Probability for Engineers, 4th Edition, John Wiley and Sons: New York.

Course Objectives:

- To perform statistical inference including confidence interval calculations and hypothesis testing
- To understand design of experiments with single factor and several factors
- To perform statistical analysis of experimental data using the analysis of variance (ANOVA)
- To learn and apply linear regression techniques
- To apply statistical techniques to engineering and scientific data

Expected Program Outcomes:

(a) an ability to apply knowledge of mathematics, science, and engineering

(b) an ability to design and conduct experiments, as well as to analyze and interpret data

(e) an ability to identify, formulates, and solves engineering problems

Grading Policy:

You will be participating in several learning activities. These include homework assignments, a midterm examination, and a final examination for developing knowledge in probability and statistics.

Homework	20%
Midterm Exam	35%
Final Exam	45%
Total	100%

Class Rules and Regulations:

1. Homework is due at the beginning of class. Late assignments are NOT accepted.
2. Academic misconducts are strictly prohibited. If it happens, a "Fail" will be automatically assigned for this course. There are no exceptions for this rule.

Accommodation(s):

Anyone needing accommodation should discuss their requirements with the course instructor on or before this first day of class in order to provide appropriate assistance. In addition, the Justin Dart Jr. Center for Students with disabilities is available with counseling assistance and testing facilities.

Schedule:
Class Time: TTh 2:30 – 4:00 pm
Class Location: E223-D3

Course Topics:

1. Review of probability (Chapters 2-5)
2. Random sampling and data representation (Chapter 6)
3. Point estimation of parameters and sampling distribution (Chapter 7)
4. Confidence interval for the parameters of the normal distribution for a single sample (Chapter 8)
5. Hypothesis testing for a single sample (Chapter 9)
6. Statistical inference for two sample (Chapter 10)
7. Design and analysis of single-factor experiments (selected topics in Chapter 13)
8. Design and analysis of experiments with several factors (Chapter 14)
9. Simple linear regression (Chapter 11)
10. Multiple linear regression (Chapter 12)

Secrets to Success in This Class:

- Learning math skills well enough to be able to apply them requires one to master general concepts and to lodge them in your mind by solving many practice problems.
- The best way to do this is to first learn the concepts, then attempt to solve the homework problems without the aid of the book or lecture notes. If you get stuck, identify the issue, go back and review the concepts until you have resolved the issue, then reattempt the problem.
- If you rely on looking at examples while working on a problem, then you can never be sure that you have actually learned the material. Better to continually test yourself than to run into a brick wall during an exam.
- Procrastination is your worst enemy because it deprives you of the opportunity to give yourself feedback during the learning process. The reading assignments and homework problems are intended to supplement and reinforce the lectures.
- You are expected to attend the entire class each time and to keep up with the lecture schedule.

Instructor:

QIANMEI (MAY) FENG, PHD
Room: E217-D3
Phone: 713-743-2870
E-mail: qmfeng@uh.edu

INDE 3381- Linear Optimization

Designation: Required Course

Description: Introduction to linear programming, Simplex method, Duality and dual simplex method, Sensitivity Analysis, Network Optimization, Dynamic Programming, Integer Programming, Industrial applications of linear programming. Cr. 3.

Prerequisites: ECE or INDE 2331 (Numerical Methods).

Textbook(s):
1. Hamdy A. Taha (2003). *Operations Research: An Introduction* (7th ed.), Prentice Hall.
2. D. Bertsimas and J. Tsitsiklis (1997). Introduction to Linear Optimization, Athena Scientific.

Expected Program Outcomes:

(a) an ability to apply knowledge of mathematics, science, and engineering

(e) an ability to identify, formulates, and solves engineering problems

Topics Covered:

The course is designed as an introduction to linear optimization. Basic techniques for modeling and optimizing deterministic systems will be discussed with emphasis on linear programming. The course work includes practice in problem formulation, basic theories to solve optimization problems, and in communicating the results of this process to users. The following topics will be covered:

1. Introduction: Linear Optimization
2. Basic linear algebra
3. The simplex method
4. Duality and dual simplex method
5. Sensitivity analysis
6. Integer programming
7. Dynamic programming
8. Transportation, network, and assignment models
9. Other industrial applications of linear programming

Schedule:

3:30 – 4:30 pm Wednesday, 12:30 – 1:30 pm Thursday or by appointment

Information about the course:

Grading:
To qualify for the following letter grades, the minimum course grades will be needed:
A(94), A-(91), B+(88), B(85), B-(82), C+(79), C(76), C-(73), D+(69), D(65), and D-(60):

Exam 1:	February 26, 2004	100 points (10%)
Project 1:	March 11, 2004	100 points (10%)
Exam 2:	April 1, 2004	100 points (10%)
Project 2:	April 22, 2004	100 points (10%)
Final Exam:	May 11, 2004	100 points (30%)
Homework & Laboratories	Average of assignment scores	100 points (30%)

Due Dates:

If the assignments are not turned in on time, you will receive a zero (0). The lecture dates and reading assignments are provided on the following page. You are responsible for all of the assigned reading material, although it may not be specifically discussed in class.

Instructor:

Jinho (Gino) Lim, Ph.D
Room: E211-D3
Phone: 713-743-4194
E-mail: ginolim@uh.edu