NEW COURSE PROPOSAL

College:

[Department: [MSEM]

Engineering and Computer Science]

Note: Use this form to request a single course that can be offered independently of any other course, lab or activity.

- Course information for Catalog Entry Subject Abbreviation and Number: [MSE606] Course Title: [Production and Operations Management for Engineers] Units: [3] units Course Prerequisites: [Consent of instructor.] (*if any*) Course Corequisites: [] (*if any*) Recommended Preparatory Courses: [] (*if any*)
- 2. Course Description for Printed Catalog: *Notes:* If grading is NC/CR only, please state in course description. If a course numbered less than 500 is available for graduate credit, please state "Available for graduate credit in the catalog description."

[MSE 606. Production and Operations Management for Engineers (3) Prerequisite: Consent of instructor. This course explores a wide variety of production and operations management topics. Topics considered include managing operations related to production planning processes, manufacturing, and service organizations]

- **3.** Date of Proposed Implementation: (Semester/Year): [Fall]/[] *The form does not allow to enter the date as Fall 2015.*
- 4. Course Level

[] Undergraduate Only

[X]Graduate Only

Graduate/Undergraduate

- 5. Course Abbreviation "Short title" (maximum of 17 characters and spaces) Short Title: [P•O•M• • • • • • • • • • • • • • • •]
- 6. Basis of Grading: [D]Credit/No Credit Only

[X]Letter Grade Only

[]]CR/NC or Letter Grade

- 7. Number of times a course may be taken:
 - [] May be taken for credit for a total of [1] times, or for a maximum of [3] units [] Multiple enrollments are allowed within a semester
- 8. C-Classification: (e.g., Lecture-discussion (C-4).) [3] units @ [C-4] []
- 9. Replaces Current Experimental Course?
 [] YES [] NO
 Replaces Course Number/Suffix:[]
 Previously offered [] times.

Date

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- **10. Proposed Course Uses:** (*Check all that apply*) **Own** Program: Major Minor Masters Г Credential Other [] Requirement or Elective in another Program [] General Elective General Education, Section 1 [] Meets GE Information Competence (IC) Requirement [] Meets GE Writing Intensive (WI) Requirement Community Service Learning (CS) [] Cross-listed with: (*List courses*) 1
- **11. Justification for Request**: Course use in program, level, use in General Education, Credential, or other. Include information on overlap/duplication of courses within and outside of department or program. (Attach)
- **12.** Estimate of Impact on Resources within the Department, for other Departments and the University. (*Attach*)

(See Resource List)

- **13.** Course Outline and Syllabus (*Attach*) *Include methods of evaluation, suggested texts, and selected bibliography.* Describe the difference in expectations of graduates and undergraduates for all 400 level courses that are offered to both.
- 14. Indicate which of the PROGRAM'S measurable Student Learning Outcomes are addressed in this course. (*Attach*)
- 15. Assessment of COURSE objectives (Attach)
 - A. Identify each of the course objectives and describe how the student performance will be assessed

(For numbers 14 and 15, see Course Alignment Matrix and the Course Objectives Chart)

- 16. If this is a General Education course, indicate how the General Education Measurable Student Learning Outcomes (from the appropriate section) are addressed in this course. (*Attach*)
- 17. Methods of Assessment for Measurable Student Learning Outcomes (Attach)
 - A. Assessment tools
 - B. Describe the procedure dept/program will use to ensure the faculty teaching the course will be involved in the assessment process (refer to the university's policy on assessment.)
- **18. Record of Consultation:** (Normally all consultation should be with a department chair or program coordinator.) If more space is needed attach statement and supporting memoranda.

		Department Chair/ Program	Concur
Date:	Dept/College:	Coordinator	(Y/N)
[3/12/2014]	[MSEM]	[Ileana Costea]	[Y]
[3/14/2014]	[]	[]	[Y]
[3/14/2014]	[]	[]	[Y]
[3/14/14]	[]	[]	[Y]
[3/14/2014]	[]	[]	[Y]
[3/14/2014]	[]	[]	[Y]

Consultation with the Oviatt Library is needed to ensure the availability of appropriate resources to support proposed course curriculum.

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Please send an email to: collection.development@csun.edu

19. Approvals:

Department Chair/Program Coordinator:		[]
College (Dean or Associate Dean):		[]
Educational Policies Committee:		[]
Graduate Studies Committee:		[]
Provost:		[]

Attachments for MSE606. Production and Operations Management for Engineers

11. Justification for request

This course will be developed for the new program MS in EM with an option in Entrepreneurship and Innovation effective Fall 2015. Most of the topics related to Operations Research, Operations Management, Decision-making, and quantitative tools of Engineering Management that graduate students of EM should be familiar with are carefully divided in to two courses in this new program: MSE600. Decision Tools for Engineers and MSE606. Production and Operations. These two courses will offer the students taking the new MS program with concepts which in the general MS in EM program are presented in the current residential program in the pair of courses MSE606A (an operations research for engineering course) and MSE 601 (a statistics course for engineers).

12. Estimate of impact on resources

The new course will be developed for online delivery with the support of Tseng College. The faculty is available in the MSEM department EM program, and there will be no additional computer and library requirement. The teaching of the course will be supported by Tseng College, thus this course will have no resource impact on the state-supported side of CSUN.

13. Course Outline and Syllabus

MSE 606 - Production and Operations Management for Engineers *R 19:00-21:45pm*, *Fall 2015*

Instructor: Alireza Kabirian, Ph.D. *Faculty Office: Jacaranda Hall 3309 Email:* akabirian@csun.edu (Whenever you e-mail me, please put MSE 606 in the subject line) *Office Hours:* **Course Text:** Operations Management (11th Edition) by Heizer and Render; Upper Saddle River, Prentice Hall; CD is not required.

Course Purpose: Engineering Operations Management is the process of converting resources into products. Resources may include materials, equipment, capital, and labor. Products may include manufactured goods or services. "Operations" is defined here as the set of activities directed toward the conversion of resources into goods and services. Production/operations management is concerned with an almost unlimited spectrum of organized efforts -- from the manufacture of printed electronic circuit boards to the delivering of a social service by a local government; from the fast-food business to the health services industry. All of these involve activities directed toward the conversion of resources into products. Production/operations management has its roots in a number of areas of study, such as industrial engineering, materials/inventory management, manufacturing management, production scheduling, quality management, etc. Examples of questions that are of concern in the field of engineering operations management are:

- How do we cut costs in our firm?
- How do we increase our workers' productivity in The Registrar's Office?
- Are we having quality problems with our heart surgeries?
- Where should we locate our new central distribution facility for Sara Lee?
- What route should a caseworker follow in handling his/her caseload?
- How many Beanie Babies should we carry in December's inventory?
- How many Honda lawnmowers will we sell next year?
- Should we work overtime in Asheboro or hire new production workers in Mexico to make more Dustbusters?
- Can we afford to automate part of our production process to make Snakelights?
- How do we manage and control the installation a new natural-gas pipeline from Alaska to the continental US and Canada?

Tentative Topics:

- Engineering Operations and Productivity
- Engineering Project Management
- Design of Innovative Goods and Services for Manufacturing Industries
- Quality Management
- Manufacturing Process Strategies
- Manufacturing Capacity Planning
- Facilities and Location Planning
- Time Study and Work Measurement
- Inventory Management
- Aggregate Manufacturing Planning
- Maintenance and Reliability

Evaluation

Midterm 1	20%
Midterm 2	20%
Final Exam (comprehensive)	35%
HWs	15%

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А	93-100 points
A-	90-93
B+	87-90
В	83-87
B-	80-83
C+	77-80
С	73-77
C-	70-73
D+	67-70
D	63-67
D-	60-63
F	<60

Assignments

- 1. There are 2 types of assignments: in-class and outside class (almost every week).
- 2. All assignments are done individually unless otherwise specified.
- 3. No late assignment will be accepted.
- 4. The instructor will not grade the assignments CAREFULLY. I have many students and there are just too many papers I receive every week that I simply cannot correct. I just take a look at your assignment to see if you are doing the assignment thoroughly and seriously and on your own. I try posting the solutions for you online in case you want to know your mistakes. Of course you are welcome to ask me questions if you do not understand the answer to a question.
- 5. In-class assignments must be returned in class. These assignments will get full credit as long as you genuinely and seriously put the effort in class to do them. If you do not understand something, you should ask. If we get a chance, I try to solve these assignments in class. If you do not attend a class, you simply lose the credit of any in-class assignment given in that class.
- 6. All outside class room assignments are posted on Moodle. Submissions are through Moodle only! I will not accept e-mail submissions or hard copies or any other method under any circumstances. You should upload a single file (either MS Word or PDF) on Moodle for every assignment. You will need to use Excel for some problems; but do not submit Excel files on Moodle; copy and paste your spreadsheet into MS Word and upload. I prefer that you do problems by hand and scan your work and make an MS Word or PDF file. But you are fine if you want to type your solutions directly into MS Word.

Examinations:

- 1. There are 2 midterms and a final. Midterms are local and the final is global; meaning midterm 1 covers materials covered just before the exam; midterm 2 covers materials after midterm 1 and before midterm 2. Final exam is comprehensive.
- 2. If you do not attend one of the midterms, you should either provide me with documents about a REALLY emergency situations you had that made you unable to attend the midterm. Then I may let you make it up. Examples of good reasons to miss an exam are jury duty, documented medical illness, or CSUN-related business. Personal problems or non-CSUN work schedules are not considered good reasons.
- 3. The exams will be very carefully graded by the instructor.

4. All exams will be held in a computer lab. You will have access to MS Excel and a printer. You may not use internet or any external device while taking the exam.

Integrity:

Cheating on the assignments or the exams will result in no credit for the assignment or exam in question, and you will be referred to the college administration. This is university policy and there will be no exceptions.

14. & 15. Measurable Student Learning Outcomes

Note: Below the engineering accreditation (ABET) terminology is used, "program objectives" instead of "program student outcomes".

The graduate engineering management program objectives are to:

- a) Identify, analyze, and solve engineering management problems quantitatively.
- b) Explain management techniques and strategies applied in engineering and high-tech firms.
- c) Explain and analyze contemporary issues and developments in operations management of engineering firms.

This course, Production and Operations Management, will address program objectives (a) and (b) with the following measurable student learning outcomes

17. Methods of assessment for measurable Student Learning Outcomes

A) Assessment tools

Rubrics developed by the College and the Department will be used (e.g. for team work, for verbal and written communication, for problem solving, using performance indicators.)

The way in which the SLOs will be measured in the course are:

- a) Evaluate how students can identify, analyze, and solve engineering management problems quantitatively by using Home Work assignments, case studies analysis, and exam questions.
- b) Measure the level of understanding of management techniques and strategies applied in engineering and high-tech firms by HW and other class assignments, case studies analysis, and exam questions.

As part of their assessment, the students will be asked to work on 5-6 case studies related to industry, which will constitute a percentage of their grade. This will give the students exposure about what is happening in the quality management field on an ongoing basis. In order to do this, these case studies or scenarios from industry, will be updated regularly.

Additionally, the students will be asked to design a survey as part of continuous process improvement, which they will be required to use in their final project. The survey will be evaluated and will constitute a percentage of their grade. The final project, in which the students will be expected to apply a majority of the concepts they have learned during the semester, will constitute a percentage of their grade.

The faculty teaching the course will select the case studies, which will be updated on a regular basis, and will also be responsible for the grading of these case studies.

B) Describe the procedure dept/program will use to ensure the faculty teaching the course will be involved in the assessment process (refer to the university's policy on assessment.)

The department has developed a thorough method for assessment and continuous improvement based on the need to go through the ABET Accreditation process for its undergraduate program. All full-time faculty are made knowledgeable of assessment through department meeting workshops, and by being asked to create course folder portfolios and Student Learning Outcome folders. When a part-time faculty will be teaching the course, a full-time faculty will be assigned to mentor and guide the part-timers. Thus all faculty teaching the course will be knowledgeable of assessment methods and actively involved in the assessment process. All faculty will be asked to evaluate student performance and assess the main aspects of the course, so that based on the assessment improvement to the course can be continually made.