

COURSE APPROVAL DOCUMENT
Southeast Missouri State University

Department: Polytechnic Studies

Course No. IM302

Title of Course: Fundamentals of Technology Management

Date: 2/12/2015

Please check: New
 Revision

I. Catalog Description (3 Credit Hours):

The course presents basic technology management knowledge to the graduate students who are not graduated from this area. Engineering economic analysis, statistics control, and basic manufacturing management technology are covered in this course. The focus will be on concepts and applications.

II. Co- or Prerequisite(s):

III. Purposes or Objectives of the Course (optional):

- 1) Learn various statistical quality control techniques including: Descriptive statistics, Probability and discrete and continuous random variables.
- 2) Demonstrate ability to identify and apply appropriate skills and techniques in math, science, engineering, and technology to analyze and solve problems.
- 3) Demonstrate proficiency in the applications of computers, appropriate software, and computer aided tools, and instrumentation to solve technical problems.
- 4) Analyze and redesign a manufacturing process to enhance quality.
- 5) Identify a methods problem; analyze the problem; propose a solution; and report the findings in a written technical report.
- 6) Learn the procedures to evaluate an engineering project.

IV. Student Learning Outcomes (Minimum of 3):

- 1) Students will be able to demonstrate proficiency in applications of use computers, appropriate software, and computer aided tools, and instrumentation to solve technical problems.
- 2) Students will be able to demonstrate ability to apply appropriate skills and techniques in math to analyze basic engineering project economically.
- 3) Students will be able to analyze workstation performance using motion and time standard technique.

V. Optional departmental/college requirements:

VI. Course Content or Outline (Indicate number of class hours per unit or section):

Topic	Hours
Simple Interest and Compound Interest, Five Types of Cash Flows (Ch-3)	4
Money and its management (Ch-4)	4
Payback period, present worth (ch-5)	4
Motion and time study for the lean environment	2
Process chart, operation chart, and route sheet	3
Techniques of micromotion study: operations analysis	2
Predetermined time standard (PTS) system	2
Standard data and its uses in balancing work	4
Work sampling	2
Descriptive statistics tools for quality control	5
Discrete and continuous random variables	4
Probability	4
Statistical inferences about product and process quality	5
Total	45

Please Attach copy of class syllabus and schedule as an example

Signature: _____
Chair

Date: _____

Signature: _____
Dean

Date: _____

Course Syllabus
Southeast Missouri State University
Department of Polytechnic Studies

Course Number: IM302

Course Title: Fundamentals of Technology
Management

Semester: Fall/Spring

Time:

Location:

Instructor:

Office:

Office Hours:

Email:

Website: <https://learning.semo.edu>

Catalog Description and Credit Hours of Course:

The course presents basic technology management knowledge to the graduate students who are not graduated from this area. Engineering economic analysis, statistics control, and basic manufacturing management technology are covered in this course. The focus will be on concepts and applications.
(3 credit hours)

Prerequisite (s):

Students learning outcomes:

1. Students will be able to demonstrate proficiency in applications of use computers, appropriate software, and computer aided tools, and instrumentation to solve technical problems.
2. Students will be able to demonstrate ability to apply appropriate skills and techniques in math to analyze basic engineering project economically.
3. Students will be able to analyze workstation performance using motion and time standard technique.

Purposes or Objective of the Course:

Upon completion of this course, the student should be able to:

1. Learn various statistical quality control techniques including: Descriptive statistics, Probability and discrete and continuous random variables.
2. Demonstrate ability to identify and apply appropriate skills and techniques in math, science, engineering, and technology to analyze and solve problems.
3. Demonstrate proficiency in the applications of computers, appropriate software, and computer aided tools, and instrumentation to solve technical problems.
4. Analyze and redesign a manufacturing process to enhance quality.
5. Identify a methods problem; analyze the problem; propose a solution; and report the findings in a written technical report.
6. Learn the procedures to evaluate an engineering project.

Expectations of Students:

1. Class attendance is strongly encouraged. Students are responsible for observing the class schedule and completing all assignments on time.
2. Students are responsible for all lecture notes, homework problems, quizzes, and lab activities related to course content.
3. Students are responsible for reading all material assigned, whether this material is covered in lecture or not.
4. Use SEMO student e-mail to communicate with instructor. When emailing the instructor, please identify yourself by **name** and the **class number with section code** (IM302).

5. Be able to access the class web page to obtain class materials and necessary information, to watch video, and take online quiz and test, etc.
6. Turn off your cell phone. Keep the classroom clean.

Course Content or Outline:

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Discrete and continuous random variables	4
Probability	4
Statistical inferences about product and process quality	5
Total	45

Textbook(s) and/or Other Required Materials or Equipment:

1. *Contemporary Engineering Economics, 5th Edition.*
By Chan S. Park, Prentice-Hall, Inc. 2011.
2. Meyers, Fred E. and Jim Stewart (2002). *Motion and Time Study for Lean Manufacturing .*
Third Edition: Prentice-Hall, Inc., Upper Saddle River, New Jersey.

Basis for Student Evaluation:

			Grading Policy:	
1.	Homework/Quizzes/Lab	20%	90 – 100	A
2.	Tests (2)	50%	80 – 89	B
3.	Final Exam	30%	70 – 79	C
			60 – 69	D
	Total	100%	< 60	F

Instruction for Homework

1. Following items should appear in the middle of the cover page:
Class and Date
Homework Number
LAST NAME, First Name, **MI**
2. The **Question Number** should be legibly written in the left margin. No other information should appear in the margin.
3. Homework must be stapled. Paper clips or any other method of fixing them together will *not* be accepted.
4. Questions should be answered systematically (in clusters) in the order which they appear in the homework. Final answer(s) to the question(s) posed should be boxed and easily visible. Show all work or full credit will not be awarded. If you make a mistake, partial credit may still be given.
5. Please note that, you should never submit your home assignment/work from any previously

- submitted home assignment/work from any students who has completed this course.
6. A late homework is not accepted.

Academic Policy Statement:

Students will be expected to abide by the University Policy for Academic Honesty regarding plagiarism and academic honest. Refer to: <http://www6.semo.edu/stuconduct/>. Main quotation is as below:

Academic dishonesty is an offense against Southeast Missouri State University. A student who has committed an act of dishonesty has failed to meet a basic requirement of satisfactory academic performance. This, academic dishonesty is *not* only a basis for disciplinary action, but is also relevant to the evaluation of the student's level of performance.

Academic honesty requires that students do not cheat, use another students work in the place of their own (Plagiarism), or knowingly assisting another to do so. Also, unauthorized access to or changing of grades on examination is unacceptable.

Student with Disabilities Statement:

If a student has a special need addressed by the Americans with Disabilities Act (ADA) and requires materials in an alternative format; please notify the instructor at the beginning of the course. Reasonable efforts will be made to accommodate special needs.

Remarks:

Questions, comments or requests regarding this course or program should be taken to your instructor. Unanswered questions or unresolved issues involving this class may be taken to the department chair, Dr. Deken (651-2104).