

INDUSTRIAL AND ENTREPRENEURIAL ENGINEERING AND ENGINEERING MANAGEMENT

EM 6000: Concepts and Principles of Engineering Management

Special Note on this offering of EM 6000:

Several of the course modules will be offered in an online-only manner. These sessions have been identified in e-learning and will be mentioned in the physical classroom setting. For these modules, the student should read all required materials, view any videos (some will need to be shown in an earlier or later class period because of copyright laws), visit any links for that module, complete and submit homework, take any assigned self-assessment tests, and take the module quiz.

In the place of an in-classroom lecture, the following online materials will need to be completed:

- 1) View the overview video.
- 2) View the online lectures (narrated slides)
- 3) Take the module quiz. Content for these quizzes is taken from the reading and the online lectures. Access to quizzes requires that you visit all module content prior to taking the quiz; otherwise, the quiz may not be made available to you on e-learning. Students should earn 75% or higher on the quiz before advancing in the course. Students who do not earn 75% or higher will be given additional attempts to take the quiz and the average score will be recorded.

Catalog Description

“Concepts, models, and applications of organizational behavior in engineering management settings. Understanding and analyzing the role of human behavior in complex sociotechnical systems.”

Course Objectives/ Performance Criteria	Performance Activity/ Evaluation Technique	TAC Criteria Addressed
1. Learn concepts, models, and applications of organizational behavior in engineering and technical organizations.	In-class and on-line exercises, exam questions, self-assessment notebook.	a
2. Gain an appreciation for and understanding of the role of human behavior in complex sociotechnical systems.	FBs, in-class and on-line exercises, exam questions	i,j
3. To appreciate, locate, and use primary sources of engineering management theory and data, rather than textbook renditions.	Exam questions, homework.	b
4. Gain or refine skills in managing interpersonal work relationships.	Exam questions, in-class and on-line exercises, self-assessment notebook.	c
5. Conduct a functional analysis of behavior for a work situation.	Exam questions	e
6. Gain insight into their own management and leadership styles.	In-class and on-line exercises, self-assessment notebook.	h

Required Materials:

1. Luthans, F., Luthans, B.C., & Luthans, K.W. 2015. *Organizational Behavior: An Evidence-Based Approach (13th Ed.)*. Charlotte: Information Age Publishing. ***You must have a legal copy of the book. Students in possession of illegal downloads will be pursued for disciplinary action.***
2. EM 6000 Course Reserves <http://www.wmich.edu/library/reserves/>.
3. Supplemental readings (see online syllabus in WMU e-learning).
4. Materials from the Harvard course for EM 6000. ***You must register for the Harvard course. See the link in e-learning.***

Optional resource for self-assessments: Robbins, S. R. (2002). *Self-Assessment Library: Insights Into Your Skills, Abilities, and Interests* (2nd ed. or later). Upper Saddle River, NJ: Pearson Education.

Course Slides Citation: Mallak, L. A. (2016). Slides for EM 6000—Concepts and Principles of Engineering Management. Personal Collection of L. Mallak, Western Michigan University, Kalamazoo, MI.

Prerequisite Learning

Students are expected to have knowledge of and the ability to apply the following concepts in class:

1. A working knowledge of the basic theory/practice of management.
2. Basic understanding of key business processes (e.g., production, finance, marketing) and technical processes (e.g., manufacturing processes, engineering design process). This is typically accomplished through active participation and successful completion of a B.S. degree in engineering or an engineering-related curriculum and through work experience, whether part-time, coop, intern, or full-time employment.
3. Able to understand, write, speak, and present in clear, understandable English.
4. Experience finding articles using databases such as ABI/Inform, FirstSearch, InfoTrac, Lexis-Nexis, and other sources.

Description of Graded Assignments and Evaluation Guidance

Notes on preparation of written assignments: All assignments will be neatly word-processed and submitted via e-learning. I place special emphasis on the use of proper grammar, spelling, and the use of an appropriate writing style. All work should be single-spaced unless otherwise specified.

Note on reading assignments: Students are responsible for all reading assignments, whether or not those readings are discussed in class. The text and readings provide a springboard and a resource for the course. Class meetings will expand on assigned topics through lecture, discussion, short presentations, small group exercises, and other methods.

Homework—Various types of homework will be assigned throughout the semester. FB refers to a 1-2 page feedback assignment. A feedback assignment means the student should offer a personal perspective of how one of the topics in the class period's assigned readings has been applied in a real-

world setting. You may base your FB on topics since the last FB was due. Use of examples from your own experience is highly encouraged.

All homework is due no later than the beginning of the class period for which it was assigned. Homework will be used as a basis for class discussion and I will feel free to call on anyone in the class to comment on their homework assignment. Late homework will be subject to a 20% penalty. After one late assignment, no further late assignments will be accepted. No homework will be accepted later than the class period following the one when the homework was originally due. Students who believe their lateness or absence should not be penalized should present appropriate documentation.

Quizzes—Quizzes will be given for each online module in the course. See the earlier note on the use of these quizzes in the course. They are designed to ensure the student has done the reading and viewed the narrated slide videos.

Self-Assessment Notebook—See details later in syllabus.

Midterm Exam—The midterm exam will test the student’s knowledge and understanding of material up to and including the class session preceding the exam.

Final Exam—The final exam will be comprehensive.

Class Participation—Your participation in class discussions and exercises is crucial to the learning process and the enjoyment of class time. Effective class participation requires your reading and studying assigned readings prior to class time. Evidence of effective class participation includes in-class discussion of material, insightful questions during short presentations, and sharing relevant experiences in class. If you miss a class, you still have the responsibility to complete all assignments on time and obtain class notes from a classmate. Notify me in advance of any planned absences.

Evaluation Distribution

Homework	20%
Quizzes	10%
Self-Assessment Notebook	15%
Midterm Exam	20%
Final Exam	25%
<u>Class Participation</u>	<u>10%</u>
Total	100%

Grading Scale

93-100	A	74-76.9	C
88-92.9	BA	67-73.9	DC
84-87.9	B	64-66.9	D
77-83.9	CB	00-63.9	E

Academic Integrity

Professionalism and integrity are essential for success in this course and in your work and personal life. You are responsible for making yourself aware of and understanding the policies and procedures in the [Undergraduate Catalog (pp. 268-269)/Graduate Catalog (pp. 26-27)] that pertain to academic integrity.

These policies include cheating, fabrication, falsification and forgery, multiple submission, plagiarism, complicity and computer misuse. If there is reason to believe you have been involved in academic dishonesty, you will be referred to the Office of Student Conduct. You will be given the opportunity to review the charge(s). If you believe you are not responsible, you will have the opportunity for a hearing. You should consult with me if you are uncertain about an issue of academic honesty prior to the submission of an assignment or test.

Library Representative

Please contact Mr. Ed Eckel with questions about library materials, finding resources, and other library research inquiries. He can connect you with the many resources available to make your life easier. For EM 6000, ABI/Inform is the database you'll primarily use:

<http://search.proquest.com/advanced?selectids=abiglobal>

Email: edward.eckel@wmich.edu

Phone: 269-387-5140

Example Journals for EM 6000

This is a partial list. Do not be constrained by this list.

Journals

Academy of Management Executive	Journal of Applied Behavior Analysis
Academy of Management Journal	Journal of Applied Psychology
Academy of Management Review	Journal of Applied Social Psychology
California Management Review	Journal of Management
Engineering Management Journal	Journal of Management in Engineering
Engineering Management Review	Journal of Management Systems Engineering
Group and Organization Studies	Journal of Organizational Change and Management
Harvard Business Review	Journal of Systems Management
IEEE Systems, Man, and Cybernetics Transactions	Management Science
IEEE Transactions on Engineering Management	Organizational Dynamics
Industrial Management	Organizational Science
International Journal of Quality and Reliability Management	Public Productivity Review
International Journal of Service Industry Management	Quality Engineering
	Quality Management Journal
	Sloan Management Review
	Small Group Behavior

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Class Schedule—

Note: Chapters refer to Luthans 13th ed. Refer to WMU e-learning for links and up-to-date information.

	Topics	Exercises & Videos	Reading Due	Assignment Due
1	Introduction & Organization Intro. to Engineering Management	intros Video: FISH! (DVD HF3) Video: Stuff Americans are Made of		Enter contact information Go through the Pike Place Fish Market Web Site
2	The Context for Behavior in Engineering Management	Video: New Business of Paradigms DVD HM901.J64 2001	<i>Skim</i> Preface & Read Ch. 1-2 R1	HW1: Feedback Take the “2. What's My Jungian 16 Type Personality?” test. Register for Everest simulation
3	ONLINE CLASS Perception, Personality & Positive OB		Read Ch. 5, 7 R2	Do the Emotional Intelligence test from Utne. Try the exhibits in the Exploratorium .
4	ONLINE CLASS Managing Work Behavior Motivation	Functional Analysis of Behavior (Video: Emotional Intelligence DVD BF1)	Ch. 6, 12	Do the Motivation exercise (13. What Motivates Me?) HW2: Feedback
5	Group Dynamics Conflict & Negotiation	Video: Teamwork in Crisis DVD HD66.T4383 (2000) 2002	Ch. 11, 9 R3	HW3: Prepare responses to the Medisys case. (Details in e-learning dropbox.) Do the Conflict Mode Instrument (34. What's My Preferred Conflict-Handling Style?)
6	ONLINE CLASS Stress Power & Politics		Ch. 10	Take the Power & Politics test (32. What's My Preferred Type of Power?)
	Midterm Exam on e-learning	Must be taken in GR		Computer Lab
7	Everest simulation		R4	Computer Lab
8	ONLINE CLASS Leadership		Ch. 13-14 R5	Do the Managerial Grid (27. What's My Leadership Style?)
9	Communication Decision Making “Sticky” messages	Giving Feedback Video: Abilene Paradox DVD HD1 PowerPoint YouTube Monty Python	Ch. 8, Abilene Paradox article, Bangalore Express	HW4: Critique (positive and negative aspects) the leadership style of a leader of your choice. Test your communication skills (24. What's My Face-to-Face Communication Style?)

				Do the Job Diagnostic Survey (37. What's My Job's Motivating Potential?) Extra credit: View TED talk
10	Job Design & Goal Setting Reward Systems	Video: Pygmalion Effect DVD HF5549.5.M63P94 2001 OR Video: Covey-A Better Way DVD HD 11	Ch. 3, 4	Turn in self-assessment notebooks.
11	Organization Theory & Organizational Culture, Resilience, Change, and Ethics	Measuring Culture Force Field Analysis Theo Janssen, Whose Mission is This?	R6, R7, R8 & BW	TED Talk: Brian Goldman, M.D.
12	Final Exam 6-8 p.m.			Computer Lab

Readings for EM 6000

Note: Except where a URL is noted, the following readings are available from the EM 6000 online course reserves. (<http://www.wmich.edu/library/reserves/>).

R1. Chapters 1 & 2 from Malcom Gladwell's "Outliers," a *New York Times* and *Business Week* bestseller.

R2. One More Time: How Do You Motivate Employees? Herzberg, Frederick. In *Harvard Business Review*, Case No. 87507. Published 09/01/1987, Harvard Business School Publishing, (12 pages).

R3. The Real Reason People Won't Change. Kegan, Robert; Lahey, Lisa Laskow. In *Harvard Business Review*, Case No. R0110E. Published 11/01/2001, Harvard Business School Publishing, (9 pages).

R4. The Leadership Lessons of Mount Everest. Useem, Michael. In *Harvard Business Review*, Case No. R0109B. Published 10/01/2001, Harvard Business School Publishing, (7 pages).

R5. Crucibles of Leadership (HBR OnPoint Enhanced Edition). Bennis, Warren G.; Thomas, Robert J. In *HBR OnPoint*, Iss. September 1. pp. 1-10. Case No. 1717. Published 09/01/2002, 2002. Harvard Business School Publishing, (10 pages).

R6. Brafman, Ori and Beckstrom, Rod. *Changing Rules: Lessons From a Starfish World*. Available: <http://www.changethis.com/27.03.ChangingRules>.

R7. How Resilience Works. Coutu, Diane L. In *Harvard Business Review*, Case No. R0205B. Published 05/01/2002, Harvard Business School Publishing, (6 pages).

R8. Will Disruptive Innovations Cure Health Care? Christensen, Clayton M.; Bohmer, Richard; Kenagy, John. Case No. R00501. *Harvard Business Review*.

EM 6000 Self-Assessment Notebook

Throughout the course, you'll take a variety of instruments to learn more about yourself as an employee and manager. Each student will maintain a three-ring notebook containing the results of these instruments, interpretive comments, and action plans for change.

Prior to turning these notebooks in for grading, the student will write a short (2-3 page) analysis **reviewing the entire notebook**, focusing on his/her results, what he/she will change as a result of this information to become closer to your personal view of the "desired manager," and **action plans for change**. The action plans should address the assessments as a whole, not a summary of the actions for each individual instrument.

Your notebook should have the following information for each instrument:

1. The results from the instrument. Printouts or screen captures from the instrument will suffice.
2. Interpretive comments about your results, especially as compared to your expectations, others in the class, and any historical data that have been collected using the specific instrument.
3. Action plans for change--What will you change (about you or your perspective) as a result of this assessment? How can you become a better manager/worker based on this information? Note: You not need to discuss changes for the Jungian 16 Type Personality Test, but you should discuss behaviors in support of your type.

Don't forget the 2-3 page summary of the entire notebook, not an instrument-by-instrument summary, but synthesize the general themes discovered as you review the entire set of assessments and include a detailed action plan (actions, dates, etc.).

Instruments to include in self-assessment notebook (See links in e-learning for the self-assessment program that you will download to take most of the self-assessments.)

1. What's My Jungian 16 Type Personality?
2. What Motivates Me?
3. What's My Preferred Conflict-Handling Style?
4. Emotional Intelligence (Use e-learning link, not from Robbins online)
5. What's My Preferred Type of Power?
6. What's My Leadership Style?
7. What's My Face-to-Face Communication Style?
8. What's My Job's Motivating Potential?

Name: _____

Uninterrupted time spent reading _____

Uninterrupted time spent on feedback: _____

Interruptions (brief description and time):

Feedback for 6000 reading material—FB# _____

0. What “aha’s” did you have from the reading?

1. What are the two or three main points you found in the reading assignment? (Describe each in 1-3 sentences.)

2. How can (or have) these main points been applied in organizations? (1-2 paragraphs per main point in #1)

3. What questions or concerns do you have as a result of the reading?