



BES 03A – Engineering Management

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BES 03A – Engineering Management
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Learning Module Development Team

Assigned Chapter	Title	Author
Chapter 7:	Motivating	<i>Dionisio M. Martin Jr.</i>
Chapter 8:	Leading	
Chapter 9:	Controlling	
Chapter 10:	Managing Production and Service Operations	
Chapter 11:	Managing the Marketing Function	
Chapter 12:	Managing the Finance Function	

Evaluators:

(First Name, Middle Initial, Last Name), Position
(First Name, Middle Initial, Last Name), Position
(First Name, Middle Initial, Last Name), Position

Course Overview

Introduction

Engineering Management is a three-unit basic engineering science course, which discusses the principles of management in the field of engineering on how to prepare students to become successful engineer manager through decision-making, planning, organizing, staffing, communicating, leading, and controlling an organization as well as in managing production and service operations, marketing and finance functions.

This course of study is also intended to discuss the different cases covering the different engineering principles and functions. The engineering students would learn the process in dealing some problems in relation to the chosen field.

Course General Objectives

At the end of the semester, 85% of the students have attained 90% level of understanding for being aware in the computer engineering, locally and globally.

1. Understand the basic concepts of engineering management.
2. Apply the principles of engineering management to analyze case studies.
3. Understand the different management strategies/techniques and model and the issues involving in management.

Course Details:

- **Course Code:** BES 03A
- **Course Title:** Engineering Management
- **No. of Units:** 3-unit lecture
- **Classification:** Lecture-based
- **Pre-requisite / Co-Requisite:** None
- **Semester and Academic Year:** 2nd Semester, AY 2021-2022
- **Schedule:** BSCpE 2A – Tuesday and Thursday, 7:30AM-9:00 AM)
- **Name of Faculty:** Dionisio M. Martin Jr.
- **Contact Details**
 - Email: dmmartinjr@yahoo.com
 - Mobile Number: 0939-906-0585
 - FB Account: Dionisio Martin Jr.
- **Consultation**
 - Day: MWF
 - Time: 2:00-3:00PM

Learning Management System

The University LMS will be used for asynchronous learning and assessment. The link and class

code for LMS will be provided at the start of class through the class' official Facebook Group.

- *Edmodo*
- *Google Classroom*
- *University LMS*

Assessment with Rubrics

Students will be assessed in a regular basis thru quizzes, assignments, individual/group outputs using synchronous and/or asynchronous modalities or submission of SLM exercises. Rubrics are also provided for evaluation of individual/group outputs.

Major examinations will be given as scheduled. The scope and coverage of the examination will be based on the lessons/topics as plotted in the course syllabus.

Module Overview

Introduction

discusses the principles of management in the field of engineering on how to prepare students to become successful engineer manager through decision-making, planning, organizing, staffing, communicating, leading, and controlling an organization as well as in managing in different engineering functions.

Case studies are also included in every chapter to understand more the lesson have been learned through analyzing and application in different dilemma experienced in engineering management.

Topics also included the management function in production and service operations, marketing and finance functions are also given emphasis in this module.

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Engineering Management

Chapter 7

Motivating

Chapter 7

Motivating

Introduction

Productivity has always been a serious concern of the management of firms. If it improves, it means greater chances for the company to grow and be more stable.

Higher productivity, however, is not a result of chance. It happens because of harder, more efficient, and more intelligent work made by the employee. To be willing partners, however, the requirement is for them to be properly motivated.

Engineer manager most directly with subordinates. The central part of the manager's role involves working with and through others to achieve organizational goals and manager's ability to motivate, influence, direct, and communicate with subordinates will determine the manager's effectiveness.

Thus, it is important and concerned with how managers can motivate subordinates so that their performance and satisfaction will be increased.

Specific Objectives

At the end of the lesson, the students should be able to:

- define motivation and enumerate the importance of motivation in managing organization.
- identify and describe the theoretical approaches to motivation.
- know the different factors motivating the members of management.
- identify the performance and the satisfaction of members in an organization with motivation.

Duration

Chapter 7: Motivating

= 3 hours
(2-hours discussion;
1-hour assessment)

Motivating – refers to the act of giving employees reasons or incentives to work to achieve organizational objectives.

Motivation – refers to the process of activating behavior, sustaining it, and directing it towards a particular goal.

– has three stages:

1. activating

2. sustaining
3. directing actions towards the achievement of objectives.

Performance – the quantity and quality of the work accomplished by an individual, group, or organization.

Factors Contributing to Motivation

1. Willingness to do a job.
2. Self-confidence in carrying out a task.
3. Needs satisfaction.

Variables Affecting Motivation

1. *Individual characteristics* – the interests, attitudes, and needs a person brings to the work situation.
2. *Job characteristics* – the attributes of the employee's tasks that people find satisfying.
3. *Work situation characteristics* – factors in the work environment of the individuals.

Characteristics of the Work Situation

1. *Personnel policies* – wage scales and employee's benefits (leaves, pensions, and the like).
2. *Reward system* – salary increases, bonuses, and promotions.
3. *Culture* – the shared norms, values, and belief of its members.

Methods of Behavior Modification

1. *Positive reinforcement* – a consequence that encourages repetition of a given behavior.
 - *primary reinforce* – such as water and food, satisfy biological needs.
 - *secondary reinforce* – such as praise, promotion, and money, rewards because of positive past associations for the individual.
2. *Avoidance learning* – learning to behave in such a way so as to avoid or escape from unpleasant consequences.
3. *Extinction* – withholding reinforcement following an undesired behavior in the belief that such behavior will eventually disappear if not reinforced.
4. *Punishment* – corrections for improper behavior subordinates by providing negative consequences.

Theories of Motivation

1. *Maslow's needs hierarchy theory*

According to Abraham Maslow, a psychologist, that human beings have five basic needs:

- a. *physiological* – include the need for air, water, food, etc.
- b. *security* – includes the needs for safety, order, and freedom from fear and threat.
- c. *social, belongingness and love* – include the affection, feelings of belongings, and human contact.

- d. *esteem* – includes the needs for self-respect, self-esteem, achievement, and respect from others.
- e. *self-actualization* – includes the need to grow, to realize one's potential.

2. *Herzberg's two-factor theory*

According to Frederick Herzberg that satisfied employee is motivated from within to work harder and that is a dissatisfied employee is not self-motivated.

Satisfied employees mentioned the following factors (called satisfiers or motivation factors):

- a. achievement
- b. recognition
- c. work itself
- d. responsibility
- e. advancement
- f. growth

Dissatisfied employees mentioned the following factors (called dissatisfiers or hygiene factors):

- a. company policy and administration
- b. supervision
- c. relationship with supervisor
- d. work conditions
- e. salary
- f. relationship with subordinates
- g. status
- h. security

3. *Expectancy theory*

A motivation model based on the assumption that an individual will work depending on his perception of the probability of his expectations to happen. And determined by following ideas:

- a. *expectancy* – is a belief about the likelihood or probability that a particular behavioral act will lead to a particular outcome. And it based on the following assumptions:
 - a combination of forces within the individual and in the environment determines behavior.
 - people make decisions about their own behavior and that of organizations.
 - people have different types of needs, goals, and desires.
 - people make choices among alternative behaviors based on the extent to which they think a certain behavior will lead to a desired outcome.
- b. *valence* – is the value an individual place on the expected outcomes or rewards.

4. *Goal setting theory*

Refers to the process of improving performance with objectives, deadlines or quality standard. According to Edwin Locke and his associates, it has the following components:

- a. goal content
- b. goal commitment
- c. work behavior
- d. feedback aspects

Techniques of Motivation

1. Motivation through job design – has two approaches:
 - a. fitting people to jobs
 - realistic job previews
 - job rotation
 - limited exposure
 - b. fitting jobs to people
 - *job enlargement* – the combining of various operations at a similar level into one job to provide more variety for workers and thus increase motivation and satisfaction. An increase in job scope.
 - *job enrichment* – the combining of several activities from a vertical cross section of the organization into one job to provide worker with more autonomy and responsibility. An increase in job depth.
2. Motivation through rewards – consist of material and psychological benefits to employees for performing tasks in the workplace. And can be classified into two categories:
 - a. *extrinsic* – refers to payoffs granted to the individual by another party. Examples are money, employee benefits, promotions, recognition, status, symbols, praise, etc. and should be properly managed in line with the following:
 - it must satisfy individual needs
 - the employee must believe effort will lead to reward
 - rewards must be equitable
 - rewards must be linked to performance
 - b. *intrinsic* – are internally experienced payoffs which are self-granted. Examples are a sense of accomplishment, self-esteem and self-actualization.
3. Motivation through employee participation – participate in various aspects of their jobs, the personal involvement, oftentimes, is carried up to the point where the task is completed. Activities are as follows:
 - a. setting goals
 - b. making decisions
 - c. solving problems
 - d. designing and implementing organizational changes

The popular approaches are:

- a. quality control circles
 - b. self-managed teams
4. Other motivation techniques for the diverse work force
 - a. flexible work schedules – an arrangement, called flextime, which allows employees to determine their own arrival and departure times within specified limits.
 - b. family support services
 - c. sabbaticals – is given to an employee after a certain number of years of service.

Implication for Organizations

1. Organizations usually get what they reward, not what they want.
2. The job itself can be made intrinsically rewarding.
3. The immediate supervisor has an important role in the motivation process.

Guidelines for Effective Motivation

1. Managers must actively and intentionally motivate their subordinates.
2. Managers should understand their own strengths and limitations before attempting to modify those of others.
3. Managers must recognize that employee have different motives and abilities.
4. Rewards should be related to performance, not to seniority or other non-merit-based considerations.
5. Job should be designed to offer challenge and variety. Subordinates must clearly understand what is expected of them.
6. Management should foster an organizational culture oriented to performance.
7. Managers should stay close to employees and remedy problems as they arise.
8. The active cooperation of employees should be sought in improving the organization's output.

References/Additional Resources/Readings

Medina, Roberto G. (2016). Engineering Management. Rex Book Store, Inc., Manila, Philippines.

Stoner, J.A. et.al. (1987). Management, 3rd Edition. Prentice-Hall, Inc.

Wheeler, Thomas F (1990). Computer and Engineering Management, McGraw-Hill.

Activity Sheet

ACTIVITY 7

Name: _____ Course/Year/Section: _____ Score: _____

CASE STUDY 7: Center City YWCA

After three days of interviewing for the job of director of the Center City YWCA, Harriet Bowen was having lunch with Margaret Pierce, the retiring director. When Pierce offered her the position, Bowen hesitated.

“You still aren’t sure?” Pierce asked. “Tell me what’s bothering you.”

“As I’ve told you,” Bowen replied, “I’m looking for a job with a challenge. I would expect the YW to face financial difficulties – in today’s economy, every nonprofit agency has these problems. But despite all the ideas and energy you have – not to mention the wide diversity of programs – the staff seems uninspired and worn out.”

Pierce smiled. “That’s true. You’ve hit on one of our biggest problems. As I’ve told you, the YWCA has undergone major changes in goals and programs over the past few decades. We no longer serve as a dormitory for young women when they first move to the city. Nor are we simply a place for a quick swim after work. At the National Convention, the YWs declared our major targets to the relevant programs for women, youth, and minorities. And yet our image in Center City – and even for some of our staff – is clearly that of a community recreation center, not a powerful force in the women’s movement.

Bowen became animated, “I can see the type of programs you have: bilingual activities for Hispanic, creative skill classes, the Women’s Center, the Rape Crisis Center, a battered wives program, youth programs, a nursery, as well as a health club for women, men, and children, and a small residence. The building is in pretty good shape. Where’s the problem?”

Pierce paused, “As you know, a lot of our staff in the sixties and seventies started as volunteers and became paid staff when we got federal funding. But the fervor of the social movement has waned at the same time that government grants, including CETA programs, were cut back. Although the neighborhood is much safer, thanks to urban renewal, many of our traditional big contributors have moved to the suburbs. Membership has not really increased substantially. So we’ve had to cut some programs, lose staff, and freeze wages. As a result, we don’t have enough people to maintain the building or keep up the records, let alone reach out into the community.”

“But surely you must still have some idealists around,” Bowen commented.

“Yes we do. But many have left, and most of our staff does just the minimum work required, for barely adequate wages.” Pierce continued, “The morale problem is more complex, in the seventies we adopted the strong affirmative action program of the National YWCA; as a result, our staff today reflects the racial composition of Center City – half white, half minority. This wasn’t easy. Qualified minority professionals are difficult to recruit. We lost some board members and long-term volunteers because of affirmative action. And some of the

staff complained that less qualified people were being hired to meet quotas. Further, we lost many white members who resisted integration. Therefore, some of our programs are unintentionally segregated. But with our limited finances it's hard to create new programs and recruit really talented staff."

Bowen listened carefully as Pierce added, "it's very frustrating. We have the facilities and some good programs – but I haven't been able to communicate this to the staff or the community, I don't have time to institute better record-keeping and an organized system of promotion and raises. So you see, we have a lot of the basic resources, but also a lot of problems."

Bowen smiled and sat back, "I think I understand the situation. It won't be easy to communicate my enthusiasm, but I'd like to try. I'll take the job."

"I'm very pleased," responded Pierce, "And remember, I intend to stay a member of the YW, so you can always call on me for help. Good luck."

Source: Written by Ellen Greenberg of the Columbia University Graduate School of Business, 1981.

Questions:

1. What are the major problems facing Harriet Bowen?
2. If you were Herzberg, how would you advise Harriet Bowen to manage the YWCA?
3. What would Nadler and Lawler tell Harriet Bowen to assist her leading her staff?
4. How might reinforcement theory apply to this case?

Assignment

ASSIGNMENT 7

Name: _____ Course/Year/Section: _____ Score: _____

Direction: Write your answer clear and concise.

1. Why is motivating relevant to the job of the engineer manager?
2. How may an individual be motivated through job design?
3. What benefits are made possible under flexible work schedule?
4. How is Maslow's hierarchy of needs related to motivation in organization?
5. Make an interview with a ranking position employee and ask him how the financial and nonfinancial benefits given to him by the management.

Assessment (Rubrics)

Each question will be graded based on these five (5) points rubrics.

LEVEL	DESCRIPTION
5 - Outstanding	Well written and very organized. Excellent grammar mechanics. Clear and concise statements. Excellent effort and presentation with detail. Demonstrates a thorough understanding of the topic.
4 - Good	Writes fairly clear. Good grammar mechanics. Good presentation and organization. Sufficient effort and detail.
3 - Fair	Minimal effort. Minimal grammar mechanics. Fair presentation. Few supporting details
2 - Poor	Somewhat unclear. Shows little effort. Poor grammar mechanics. Confusing and choppy, incomplete sentences. No organization of thoughts.
1 - Very Poor	Very poor grammar mechanics. Very unclear. Does not address topic. Limited attempt.

Learner's Feedback Form

Name of Student: _____
Program : _____
Year Level : _____ Section: _____
Faculty : _____
Schedule : _____

Learning Module : Number: _____ Title : _____

How do you feel about the topic or concept presented?

- | | |
|---|--|
| <input type="checkbox"/> I completely get it. | <input type="checkbox"/> I'm struggling. |
| <input type="checkbox"/> I've almost got it. | <input type="checkbox"/> I'm lost. |

In what particular portion of this learning packet, you feel that you are struggling or lost?

Did you raise your concern to you instructor? ☐ Yes ☐ No

If Yes, what did he/she do to help you?

If No, state your reason?

To further improve this learning packet, what part do you think should be enhanced?

How do you want it to be enhanced?

NOTE: This is an essential part of course module. This must be submitted to the subject teacher (within the 1st week of the class).