

### Name of Institute: ITE, INDUS UNIVERSITY

### Name of Faculty: Prof. Shaswat L. Padalia

#### Course code: ME0412

### **Course name: MANAGEMENT FOR ENGINEERS**

Pre-requisites: INDUSTRIAL ENGINEERING

Credit points: 2

Offered Semester: 4

#### Course coordinator (weeks 01 - 15)

Full name: Prof. Shaswat L. Padalia

Department with sitting location: 3F, Office of Dean Research, Bhanwar Building, Indus University.

Telephone: 3303 Email: shaswatpadalia.me@indusuni.ac.in

Consultation times: 4 pm to 5 pm

Students will be contacted throughout the session via mail with important information relating to this course.

### **Course Objectives**

- 1. Techniques relating to managing engineering activities, engineer's transition into management, engineering managerial functions, motivation of individual and group behaviour.
- 2. Productivity assessment/improvement.
- 3. Managing the quality function and communications.

### **Course Outcomes (CO)**

Student will be able to

1. Know, comprehend, apply, analyze, synthesize and evaluate the basic principles of the fundamentals of managing technical organizations.

2. Prepare for further study in the area of engineering technology management.



3. Identify and apply appropriate management techniques for managing contemporary organizations.

4. Have an understanding of the skills, abilities, and tools needed to obtain a job on a management track in an organization of their choice.

- 5. Manage the demand forecasting for any organization.
- 6. Develop leadership skill required to handle any project.

# **Course Outline**

(Key in topics to be dealt)

- 1. Importance and Functions of Management
- 2. Leadership and Organization Management
- 3. Management of Technology
- 4. Marketing Management
- 5. Financial Management
- 6. Ethics

### Method of delivery

Power Point presentations

### **Study time**

2 Hours a week

### **CO-PO Mapping (PO: Program Outcomes)**

**PO1**. **Engineering knowledge**: Apply the knowledge of mathematics, science, engineering fundamentals, and an engineering specialization to the solution of complex engineering problems.

**PO2. Problem analysis**: Identify, formulate, review research literature, and analyze complex engineering problems reaching substantiated conclusions using first principles of mathematics, natural sciences, and engineering sciences.

**PO3**. **Design/development of solutions**: Design solutions for complex engineering problems and design system components or processes that meet the specified needs with appropriate consideration for the public health and safety, and the cultural, societal, and environmental considerations.



**PO4.** Conduct investigations of complex problems: Use research-based knowledge and research methods including design of experiments, analysis and interpretation of data, and synthesis of the information to provide valid conclusions.

**PO5.** Modern tool usage: Create, select, and apply appropriate techniques, resources, and modern engineering and IT tools including prediction and modeling to complex engineering activities with an understanding of the limitations.

**PO6**. The engineer and society: Apply reasoning informed by the contextual knowledge to assess societal, health, safety, legal and cultural issues and the consequent responsibilities relevant to the professional engineering practice.

**PO7**. Environment and sustainability: Understand the impact of the professional engineering solutions in societal and environmental contexts, and demonstrate the knowledge of, and need for sustainable development.

**PO8**. Ethics: Apply ethical principles and commit to professional ethics and responsibilities and norms of the engineering practice.

**PO9**. **Individual and team work**: Function effectively as an individual, and as a member or leader in diverse teams, and in multidisciplinary settings.

**PO10**. **Communication**: Communicate effectively on complex engineering activities with the engineering community and with society at large, such as, being able to comprehend and write effective reports and design documentation, make effective presentations, and give and receive clear instructions.

**PO11. Project management and finance**: Demonstrate knowledge and understanding of the engineering and management principles and apply these to one's own work, as a member and leader in a team, to manage projects and in multidisciplinary environments.

**PO12. Life-long learning**: Recognize the need for, and have the preparation and ability to engage in independent and life-long learning in the broadest context of technological change.

|        | PO- |
|--------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
|        | 1   | 2   | 3   | 4   | 5   | 6   | 7   | 8   | 9   | 10  | 11  | 12  |
| CO – 1 | 3   | 1   | 1   | -   | 1   | 1   | -   | -   | -   | -   | -   | 1   |
| CO – 2 | 3   | 1   | 3   | 1   | 2   | 1   | 1   | -   | -   | -   | -   | 1   |
| CO – 3 | 3   | 2   | 3   | 1   | 3   | 1   | 1   | -   | -   | -   | -   | 1   |
| CO – 4 | 3   | 2   | 3   | 1   | 3   | 1   | 1   | -   | -   | -   | -   | 1   |
| CO – 5 | 3   | 2   | 3   | 2   | 2   | 1   | 1   | -   | -   | -   | -   | 1   |
| CO – 6 | -   | 1   | 1   | -   | -   | -   | -   | -   | 2   | 1   | 2   | 3   |



## Blooms Taxonomy and Knowledge retention (For reference)

(Blooms taxonomy has been given for reference)





Figure 2: Knowledge retention

## **Graduate Qualities and Capabilities covered**

(Qualities graduates harness crediting this Course)

| pabilities                                    |
|---|
| rofessional knowledge, grounding &<br>areness |
| r<br>a  |



| Independent learners                              | 2 Information literacy, gathering &         |
|---|---|
| Engage with new ideas and ways of thinking        | processing                                  |
| and critically analyze issues. Seek to extend     |   |
| and reflection. Find and evaluate information     |   |
| using a variety of sources and technologies.      |   |
| Acknowledge the work and ideas of others.         |   |
| Problem solvers                                   | 4 Problem solving skills                    |
| Take on challenges and opportunities. Apply       |   |
| creative, logical and critical thinking skills to |   |
| respond effectively. Make and implement           |   |
| and aim for high standards                        |   |
| and ann for mgn standards.                        |   |
| Effective communicators                           | 5 Written communication                     |
| Articulate ideas and convey them effectively      | 6 Oral communication                        |
| using a range of media. Work collaboratively      | 7 Teamwork                                  |
| Recognize how culture can shape                   |   |
| communication.                                    |   |
| Responsible                                       | 10 Sustainability, societal & environmental |
| Understand how decisions can affect others        | impact                                      |
| and make ethically informed choices.              |   |
| Appreciate and respect diversity. Act with        |   |
| integrity as part of local, national, global and  |   |
|   |   |

# **Practical work:**

NIL

### Lecture/tutorial times

(Give lecture times in the format below)

# **Lectures:**

Two per week in each offered division



### Attendance Requirements

The University norms states that it is the responsibility of students to attend all lectures, tutorials, seminars and practical work as stipulated in the course outline. Minimum attendance requirement as per university norms is compulsory for being eligible for semester examinations.

### Details of referencing system to be used in written work

- 1. https://www.managementstudyguide.com/management\_functions.htm
- 2. https://www.managementstudyguide.com/organizational-leadership.htm

3. https://www.sopheon.com/wp-content/uploads/eBook-5-Keys-to-Effective- Innovation-and-New-Product-Development-NPD-Planning.pdf

4. http://www.pondiuni.edu.in/storage/dde/downloads/mbaii\_mm.pdf

5. http://www.pondiuni.edu.in/storage/dde/downloads/mbaii\_fm.pdf

### **Text books**

- 1. Principles of Management by PC Tripathi & Reddy.
- 2. Management -I by Stephen P. Robbins& Stoner.
- 3. Management-II BY Kotler, Stoner

### **Reference Books**

- 1. L. M. Prasad; Principles of Management; Sultan Chand and Sons
- 2. Karminder Ghuman and K. Aswathapa; Management Concept

### **Additional Materials**

Power Point Presentations

Web Resources: http://nptel.ac.in/courses

### ASSESSMENT GUIDELINES

Your final course mark will be calculated from the following:

| CIE-TH      | Name of the Component           | Total Marks |
|-------------|---------------------------------|-------------|
| Component-1 | Mid Semester Exam               | 40          |
| Component-2 | Presentation                    | 10          |
| Component-3 | Attendance/Class Participations | 10          |



### SUPPLEMENTARY ASSESSMENT

Students who receive an overall mark less than 40% in internal component or less than 40% in the end semester will be considered for supplementary assessment in the respective components (i.e internal component or end semester) of semester concerned. Students must make themselves available during the supplementary examination period to take up the respective components (internal component or end semester) and need to obtain the required minimum 40% marks to clear the concerned components.

### **Practical Work Report/Laboratory Report:**

A report on the practical work is due the subsequent week after completion of the class by each group.

#### Late Work

Late assignments will not be accepted without supporting documentation. Late submission of the reports will result in a deduction of -% of the maximum mark per calendar day

#### Format

All assignments must be presented in a neat, legible format with all information sources correctly referenced. Assignment material handed in throughout the session that is not neat and legible will not be marked and will be returned to the student.

### **Retention of Written Work**

Written assessment work will be retained by the Course coordinator/lecturer for two weeks after marking to be collected by the students.

### **University and Faculty Policies**

Students should make themselves aware of the University and/or Faculty Policies regarding plagiarism, special consideration, supplementary examinations and other educational issues and student matters.

**Plagiarism** - Plagiarism is not acceptable and may result in the imposition of severe penalties. Plagiarism is the use of another person's work, or idea, as if it is his or her own - if you have any doubts at all on what constitutes plagiarism, please consult your Course coordinator or lecturer. Plagiarism will be penalized severely.

### Do not copy the work of other students.

Do not share your work with other students (except where required for a group activity or assessment)



# **Course schedule (subject to change)**

(Mention quiz, assignment submission, breaks etc as well in the table under the Teaching Learning Activity Column)

| Week #  | Topic & contents   | CO<br>Addressed | Teaching Learning<br>Activity (TLA) |
|---------|--|-----------------|-------------------------------------|
| Week 1  | Meaning, importance, skills and roles of manager, different levels of management.  | 1               | PPT, Chalk & Board                  |
| Week 2  | Functions of management, planning: nature, importance, steps,  | 1               | PPT, Chalk & Board                  |
| Week 3  | Organizing: Meaning, process, principles of<br>organizing, staffing: -manpower planning,<br>recruitment, selection, placement.<br>Assignment-1 | 2               | PPT, Chalk & Board                  |
| Week 4  | Leadership and Organizations Management,<br>Strategic Planning   | 2               | PPT, Chalk & Board                  |
| Week 5  | Budgeting, Project Planning<br>Assignment-2  | 3               | PPT, Chalk & Board                  |
| Week 6  | Risk Identification, Assessment and Response<br>Planning<br>Assignment-3   | 3               | PPT, Chalk & Board                  |
| Week 7  | Management of Technology, Product<br>Development and Innovation  | 3               | PPT, Chalk & Board                  |
| Week 8  | Technical Entrepreneurship,  | 3               | PPT, Chalk & Board                  |
| Week 9  | Global Trade and International Operations,<br>Operations Management<br>Assignment-4  | 4               | PPT, Chalk & Board                  |
| Week 10 | Marketing Management: -the 4 p's of marketing, demand forecasting (concepts only),   | 4               | PPT, Chalk & Board                  |
| Week 11 | market segmentation.   | 4               | PPT, Chalk & Board                  |
| Week 12 | Financial management: -meaning, scope, functions, objectives, role of financial manager.   | 4               | PPT, Chalk & Board                  |
| Week 13 | Lean Systems,  | 4               | PPT, Chalk & Board                  |
| Week 14 | Intellectual Property, Legal Issues in Engineering Management,   | 4,5             | PPT, Chalk & Board                  |
| Week 15 | Principles of Ethics for Engineering Managers<br>Assignment-5  | 4,5             | PPT, Chalk & Board                  |