### Subject Description Form

<table>
<thead>
<tr>
<th>Subject Code</th>
<th>ENG306</th>
</tr>
</thead>
<tbody>
<tr>
<td>Subject Title</td>
<td>Engineering Management</td>
</tr>
<tr>
<td>Credit Value</td>
<td>3</td>
</tr>
<tr>
<td>Level</td>
<td>3</td>
</tr>
<tr>
<td>Pre-requisite/ Co-requisite/ Exclusion</td>
<td>Nil</td>
</tr>
</tbody>
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#### Objectives

This subject provides students with

1. skills and techniques involved in the management of people and engineering activities in the production of goods and services;
2. skills in the use and understanding of different quality management tools and techniques in an organization, hence enabling students to interpret the quality of work content of typical jobs;
3. the background to understand ethical and business behaviors in engineering organizations, and the change management techniques.

#### Intended Subject Learning Outcomes

Upon completion of the subject, students will be able to:

1. perform tasks in an organization related to organizing, planning, and controlling project and process activities;
2. select appropriate management techniques for improving organizational structures, work procedures, and quality performance of operational tasks;
3. analyze the factors that affect changes in the work environment, and be aware of the approaches in implementing change in an organization;
4. be aware of the imperatives of ethical and business behaviors in engineering organizations in a fast-changing business environment.

#### Subject Synopsis/Indicative Syllabus

<table>
<thead>
<tr>
<th>Syllabus:</th>
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</table>
| 1. **Introduction**  
General management concepts in organizations; Functions and types of industrial organizations; Organizational structures; Corporate objectives, strategy, and policy |
| 2. **Industrial Management**  
Roles of managers: Process of management, leadership, planning, organizing, motivating, and control of social and engineering activities; Quality management: Related tools and techniques |
| 3. **Project Management**  
Project scope and objectives; Network analysis; Tools that support engineering operations and task scheduling |
| 4. **Management of Change**  
Strategic leadership and innovation; Organizational change; Leading planned change; Organizational development; Stress management; Factors that affect the execution of change |
| 5. **Effects of Environmental Factors**  
The effects of extraneous factors on the operations of engineering organizations, such as ethics and corporate social responsibilities issues |
Teaching/Learning Methodology

A mixture of lectures, tutorial exercises, and case studies are used to deliver various topics in this subject. Some topics are covered by problem-based format whenever applicable in enhancing the learning objectives. Other topics are covered by directed study so as to develop students’ “life-long learning” ability.

The case studies, largely based on real experience, are designed to integrate the topics covered in the subject and to illustrate the ways various techniques are inter-related and applied in real life situations.

Assessment Methods in Alignment with Intended Learning Outcomes

<table>
<thead>
<tr>
<th>Specific Assessment Methods/Tasks</th>
<th>% Weighting</th>
<th>Intended Subject Learning Outcomes to be Assessed (Please tick as appropriate)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Continuous Assessment (total 40%)</td>
<td>30%</td>
<td>☑ ☑ ☑ ☑</td>
</tr>
<tr>
<td>• individual presentation</td>
<td></td>
<td></td>
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<tr>
<td>• group report</td>
<td>10%</td>
<td>☑ ☑ ☑ ☑</td>
</tr>
<tr>
<td>2. Final examination</td>
<td>60%</td>
<td>☑ ☑ ☑ ☑</td>
</tr>
<tr>
<td>Total</td>
<td>100%</td>
<td>☑ ☑ ☑ ☑</td>
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Explanation of the appropriateness of the assessment methods in assessing the intended learning outcomes:

The coursework of this subject involves students working in groups to study cases that reflect the realities of management situations in an engineering setting. Through such exercises, students’ ability to apply and synthesize acquired knowledge can be assessed on the basis of their performance in group discussion, oral presentations, and the quality of their written reports on these case studies. A written final examination is also designed to assess the intended learning outcomes.

Student Study Effort Expected

Class contact (time-tabled):

- Lectures and review 30 Hours
- Tutorials and presentations 12 Hours

Other student study effort:

- Research and preparation 30 Hours
- Report writing 10 Hours
- Preparation for oral presentation and examination 34 Hours

Total student study effort: 116 Hours

Reading List and References