1. Overview

In this topic, you will learn about the syllabus for Information Systems Project Management. The syllabus includes important information about the subject, a subject description, intended learning outcomes, the textbook and other resources. Please read this information carefully and revisit it whenever necessary.

2. Subject Description

This subject seeks to provide an understanding of the activities involved in an information systems (IS) project, from project proposal and adoption through system analysis and design, software production and testing, and implementation and maintenance. IS projects can vary considerably in scope, and may involve

- the delivery of a complete IS system, including hardware, software and other infrastructure components
- the maintenance of an existing system, including configuration management and rollout
- business process and organisation redesign so that IS systems are more effectively utilised
- change management so that the organisation is able to easily transfer from using an old system to a new system

In many cases, IS projects develop highly useful software for organisations. The development of such software has proven to be highly problematic, in terms of time and budget over-runs as well as attaining designed functionality.

Throughout the subject, you will be introduced to a wide range of project management methods, concepts and techniques. These methods are normally used by IS project managers at different stages and points in an IS project. The project management roadmap ties the various techniques of project management into a single framework.

The roadmap consists of the following broad phases namely, adoption, initiation, planning, implementation and control and closure. You will learn about how these phases integrate with the various methods of project management in greater detail as you move through the subject.

Project organisation is an important issue in efficiently accomplishing IS projects. You will be presented with a discussion of those factors consistently found to be critical to project success. Project manager skills will be discussed, along with the description and roles of project champions. Matrix organisation has been applied by
many large organisations that repetitively deal with producing software, especially when geographic dispersion is present. The matrix form of organisation will be presented and its features evaluated.

A key project task is top management evaluation for purposes of adoption. The traditional cost–benefit approaches are presented to include net present value and return on investment. The simpler financially-based method of payback is also presented. These methods cover some aspects of project adoption. We also discuss the need to evaluate project risks. Once a project is adopted, the next step is requirements analysis. This requires close co-operation between system analysts and users. The importance of user involvement in identifying and mitigating project risk is presented.

Commonly used systems analysis and design methods are reviewed. The basic Waterfall model presents the basic phases of IS projects. The Spiral model is a means to deal with high levels of IS project risk. Software development standards are discussed, as is software configuration management, a means to control and manage IS projects. Tools to attain software quality are discussed. Two commonly used project estimation methods - lines of code and function point analysis - are presented and compared.

Project scheduling begins with the critical path method. This important method is demonstrated in simple terms. Limitations of the critical path method are discussed, along with means to overcome these limitations. The concept of slack is demonstrated. Resource levelling and smoothing are means to adjust schedules to attain important project management objectives. Agile methods are presented as a means to quickly and successfully complete IS projects of critical importance.

When IS projects are completed, they must be implemented to do the organisation any good. The importance of organisational learning and development of a project knowledge base is discussed. The use of outsourcing as an alternative means of accomplishing IS projects (or elements of projects) is evaluated. Means to control IS projects are presented and the earned value method demonstrated.

### 3. Objectives

**Objectives: Information Systems Project Management**

Upon completion of this subject, you should be able to

- define an IS project and characterise the factors which will lead to the success and failure of a project
- evaluate and assess project proposals for adoption using a range of financial methods as well as consideration of risk factors
- describe the activities involved in the planning of an IS project and estimate the expected resources needed to accomplish the project's goals
- create and manage a project schedule by applying critical path analysis and resource levelling methods
- manage an IS project to successful completion through the structured management of project risk
- create processes that enable an organisation to learn from past projects to enable better performance on future projects
- measure earned value of projects, as part of a project control system
4. Subject Design

The industry success rate for IS projects still leave much room for improvement. This subject guides you through the roadmap of a project, from project conceptualisation and project adoption, project initiation, project planning and scheduling, project implementation and control, and finally project closure. A project may fail at any point in the project life cycle, so it is important that you understand relevant methods for improving project performance in each stage.

The subject comprises both individual and group assignments. Interaction among group members enhances the learning and understanding of the cases presented. Participation in group discussion will also allow a free flow of views as you are able to share insights of economies from various countries. Hence, you are expected to use the communication tools provided and take an active part in the discussion. Here are some useful tips to help you collaborate successfully with other members of your team.

Reading

The reading assignments identified within each segment provide in-depth information on a particular topic and prepare you for the online content. We recommend that you complete both the readings and the online material in each segment so that you are equipped for the end-of-segment assignments. You are free to move through the segment at your own pace, as long as you are ready to begin the end-of-segment assignment at the time chosen by your professor.

Final Exam

You are required to take a final examination to successfully complete this subject. Instructions and details about the exam will be provided to you shortly after the commencement of the subject. In order to pass the subject, you must pass the final exam.

Assessment Summary

Marks will be allocated for the following components in this subject:
- Participation in Discussions
- End of Segment Assignments
- Final Project
- Final Exam

You will be informed of the breakdown in the overall grades at the start of the section.

5. PMI and PMBOK

The Project Management Institute (PMI) is the most internationally recognised professional body for project managers. If you are interested in becoming a certified Project Management Professional (PMP), you can use the subject to help prepare for the certification exam or fulfil the requirement for contact hours. You may also refer to the following book for preparation of this certification:

You are encouraged to seek certification in order to enhance your professional standing.
PMI's *Project Management Book of Knowledge* (PMBOK) represents a set of best practices for project management. PMBOK identifies nine areas of project management competence. Although PMBOK is not specific to IS projects, unlike much of the content in this subject, it is useful to understand how the subject content here relates to the PMBOK areas of competence. The following table illustrates this relationship.

<table>
<thead>
<tr>
<th>PMI Competencies</th>
<th>Purpose</th>
<th>Components</th>
<th>Subject Content</th>
</tr>
</thead>
<tbody>
<tr>
<td>Project Integration</td>
<td>To co-ordinate project activities and integrate all efforts into a project plan; integrate, analyse, and report the project results in carrying out the project plan; control changes to the baseline plan; and collect, integrate and organise project information in a project information system.</td>
<td>Project plan development</td>
<td>Segment 2, ‘Information Systems Project Organisation’, describes the importance of the project plan and some of the key processes relating to its development and execution. Change control is discussed in segment 3 ‘Project Adoption and Initiation’, segment 4 ‘Project Planning’ and segment 6 ‘Project Control and Closure’.</td>
</tr>
<tr>
<td>Scope Management</td>
<td>Consists of the processes required to ensure that the project includes all the work required, and only the work required, to complete the project successfully.</td>
<td>Requirements definition (business)</td>
<td>The management of requirements is described in Segment 3 ‘Project Adoption and Initiation’. Scope management methods, such as financial methods, are also covered in Segment 3. Segment 4, ‘Project Planning’ provides a thorough description of work breakdown structures (WBS).</td>
</tr>
<tr>
<td>Time Management</td>
<td>To develop the project schedule, manage to that schedule and ensure the project is</td>
<td>Activity definition</td>
<td>Aspects of time management, such as activity planning and project</td>
</tr>
</tbody>
</table>

**Activity definition**

**Activity sequencing**
<table>
<thead>
<tr>
<th>Subject</th>
<th>Information Systems Project Management</th>
</tr>
</thead>
<tbody>
<tr>
<td>Segment</td>
<td>Introduction</td>
</tr>
<tr>
<td>Topic</td>
<td>Syllabus</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Topic</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cost Management</td>
<td>To determine the total costs of the project, manage to those costs and ensure the project is completed within the approved budget.</td>
</tr>
<tr>
<td></td>
<td>Resource planning, Cost estimating, Cost budgeting</td>
</tr>
<tr>
<td></td>
<td>Cost management and issues relating to resource planning, estimation and budgeting are dealt with in Segment 4, ‘Project Planning’.</td>
</tr>
<tr>
<td>Quality Management</td>
<td>To satisfy the customer, to conform to requirements, to ensure fitness for purpose and to ensure the product is fit for use.</td>
</tr>
<tr>
<td></td>
<td>Quality planning, Quality assurance, Quality control</td>
</tr>
<tr>
<td></td>
<td>Quality standards and the techniques for ensuring software quality, such as configuration management, are described in Segment 4, ‘Project Planning’.</td>
</tr>
<tr>
<td>Project Human Resource Management</td>
<td>To identify the requisite skill sets required for specific project activities, to identify individuals who have those skill sets and to assign roles and responsibilities for the project, managing and ensuring high productivity of those resources and forecasting future resource needs.</td>
</tr>
<tr>
<td></td>
<td>Organisational planning, Staff acquisition, Team development and buy-in</td>
</tr>
<tr>
<td></td>
<td>Issues relating to the structure, organisations, staffing and roles associated with IS projects are discussed in segment 2, ‘Information Systems Project Organisation’ and segment 3 ‘Project Adoption and Initiation’.</td>
</tr>
<tr>
<td>Communications Management</td>
<td>To manage the project data process from collection to categorisation to dissemination to utilisation and decision-making.</td>
</tr>
<tr>
<td></td>
<td>Communications planning, Information distribution, Performance reporting</td>
</tr>
<tr>
<td></td>
<td>Communication planning and information distribution are described in segment 2, ‘Information Systems Project Organisation’. Aspects of performance reporting are</td>
</tr>
</tbody>
</table>
Risk Management
To identify, analyse, respond, and control risk factors throughout the life of a project.

Risk identification
Risk quantification
Risk response development

Risk management pertaining to IS projects is discussed in detail in segment 4, ‘Project Planning’ and segment 6, ‘Project Control and Closure’.

Procurement/Vendor Management
The processes and actions undertaken to acquire goods and services in support of the project. It also includes activities in managing the contract throughout the period of performance and closing the contract upon completion.

Procurement planning
Requisition
Solicitation/source selection

Aspects of procurement and vendor management, particularly in relation to outsourcing, are discussed in Segment 6, ‘Project Control and Closure’.

**Source:** Adapted from Crawford, J.K., *Project Management Maturity Model* (2002).

### 6. Subject Resources

**Textbook**
The textbook that has been recommended for this subject.

**eLibrary**
The eLibrary provides access to full-text articles to enhance your learning experience. Note that licensed resources from the eLibrary, such as the databases, eBooks, eJournals, and new sources have restricted access. These resources are permitted to the staff and currently-enrolled students for personal, non-commercial use.

**Cases**
You will be required to analyse cases as part of this subject. Here are some guidelines to help you get started. You need to go to the Cases folder in the Section Home page for the downloading instructions.

### 7. Academic Honesty

It is most important that you familiarise yourself with the standards for academic honesty and the penalties for any breach of these standards as defined in the Student Handbook.