

# Mi-EIS

## Managing Implementation Enterprise Information Systems

CN/ASIA-LINK/021 (105-576)

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### Mi-EIS D2.1: Reference Curriculum for Master Level Courses in Managing Implementation of Enterprise System Implementation

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**Circulation:** Public  
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**Issue Date:** 13 February 2006  
**Document Version:** 03  
**Document Filename:** Mi-EIS D2.1 Reference Curriculum



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## **DOCUMENT HISTORY**

<b>Version</b>	<b>Date</b>	<b>Comment</b>
01	13 February 2006	First issue
02	3 March 2006	Second issue
03	May 30, 2007	Final issue

## **EXECUTIVE SUMMARY**

This document contains the material relating to Deliverable 2.1, a reference curriculum for Master Level Programmes in Managing Implementation of Enterprise Information Systems for the AsiaLink project Mi-EIS (Management of Implementation of Enterprise Information Systems (Asia-Link B7-3010)). The objective of the document is to satisfy delivery of contractual obligations and to provide the foundations on which the rest of the project work can be developed and delivered from.

The reference curriculum is a standalone document that describes the teaching structure of the Master programme. The reference curriculum provides a basis for specific local implementations in different national, international and global contexts.

The reference curriculum is based on the European Credit Transfer System, which has been implemented in many European universities already. In other contexts, the programme may require extensive adaptation.

The Mi-EIS project develops further teaching materials which are available separately. The teaching materials are the intellectual property of the Mi-EIS project partners.

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## 1 INTRODUCTION

The area of implementing enterprise systems in organisations has existed for several decades now. Still, the area is complex and the implementation path is paved with many, often recurring, problems as can be read in many academic and professional publications. Gradually, people start to realise that implementation of complex enterprise-wide technology requires both technical and organisational expertise.

The Mi-EIS project aims to develop a curriculum that educates students to become researchers or professionals understanding the complex interaction between technology and organisation and the process of change needed to implement enterprise-wide systems. In chapter 2, the basic curriculum, called reference curriculum, is outlined. The reference curriculum serves as a basis for local implementation of the curriculum.

The reference curriculum consists of eight compulsory modules, which are deemed essential to increase students' insight into the complexity and dynamics of an enterprise system implementation project and provide them with knowledge, tools and methods for managing a complex project in a real-life setting. An extensive body of cases are available to the MI-EIS project team, European cases from the BEST project (for more information see [www.best-project.com](http://www.best-project.com)) and Chinese cases gathered in the MI-EIS project. The cases will be used to enrich modules with practical real-life knowledge for assignments or as illustrations of some subjects. The case study report will present the Chinese case and their use for the reference curriculum. In WP5 each of the modules will be further detailed, while the possibility for using the case material will be presented.

The reference curriculum is composed by the three partners in the MI-EIS project. This means that the modules in the reference curriculum are different in style and teaching methods used (see WP5 documents). Through a teaching method workshop style and method differences have been exchanged (see WP6 reports). Local implementation of the reference curriculum may require an adaptation of the varying teaching methods to be used in the specific context.

## 2 CURRICULUM STRUCTURE

In this chapter the reference curriculum is described in terms of programme goal, admission requirements, qualification awarded, further studies, programme modules, modules and final assignment, the final project and potential electives, and the final examination.

### 2.1 Educational and Professional Goals

The vision accompanying the delivery of a Master programme with the reference curriculum described is to teach and produce a future generation of Enterprise System Implementation (ESI) professionals. Within this scope, individuals will, at the end of the programme, be equipped to:

- align business needs and processes with an IT system through methods that acknowledge the co-development of technology and organisation
- carry out project management in harmony with a focus on human change

- provide a service based on a socio-technical approach

By the end of the programme, students, as newly qualified ESI professionals, will have proven their demonstrated knowledge and understanding in, a.o., business strategy, IT strategy, business operation and enterprise-wide processes, information systems, business dynamics and change, business – IT alignment, and business - IT co-development.

Their study at the Master level will have provided a basis for originality in developing and applying ideas in the research context in general, and in particular in relation to: designing research and choosing relevant research methods, establishing a reference model by combining different fields, gathering data, analysing data, generating conclusions or new hypotheses.

Additionally, the newly qualified ESI professionals will have proven their ability to apply knowledge and understanding and problem solving abilities within the ESI context in terms of: analysis, selection and use of knowledge and academic material, improvement plans and actions, implementation of change, and evaluation.

Graduates of the course will have the ability to integrate knowledge, handle complexity, and formulate judgements with incomplete or limited information - including reflecting on social and ethical responsibilities linked to the application of their knowledge (adding these to specialist and non-specialist audiences clearly and unambiguously). Of particular relevance here, students will have developed and honed their skills in: communication, reporting, team-working, and taking part in and managing meetings.

Finally, students will have developed learning skills that allow them to continue to study in a manner that may be largely self-directed or autonomous, including by necessity the ability to be self-critical, demonstrate commitment and the right attitudes required for roles they will fill following graduation.

## **2.2 Admission requirements**

In order to qualify to enter this Master programme the following requirements will apply:

- A bachelor degree in suitable subjects - e.g., Business Studies, Information Technology, Computer Science, or other relevant social or physical sciences.
- A typical non-qualifying bachelor-level subjects at the discretion of the course administrator - on a case by case basis in reference to individual students demonstrating aptitude in the required areas. Preparatory programmes may be available to assist students in reaching a qualifying level of knowledge.
- Language ability – in the target language in which the course is delivered, assessed to a recognised level (in cases where the student's native language is not that in which the programme is delivered).

In order to qualify to enter an MBA version of the programme, the following requirements apply:

- Suitable vocational experience – usually assessed by number of years of experience in industry at stipulated levels of responsibility and management.

At the local level of implementation, for example, in Cranfield University, there may be possibilities in which exceptions to admissions requirements can be made, for example, where practitioners have more than 10 years experience without any specified academic level of achievement.

By way of added context and illustration, Dutch requirements stipulate that students:

- have completed an appropriate programme (at least a Bachelor's or equivalent degree in an academic field), to meet the required entry level for the programme;
- provide evidence that proves sufficient fluency in the English language (non-Dutch students whose native language is other than English); the UT assesses participants' English language abilities on the basis of the internationally recognized IELTS-test — the required minimum score for admission to the University of Twente is 6.5. (see IELTS-website at [www.ielts.org](http://www.ielts.org) for details of test centres). TOEFL scores are accepted only in specific cases where it is proven that IELTS scores were impossible to obtain;
- demonstrate a high level of motivation and commitment;
- have at their disposal sufficient funds to finance their studies;
- comply with extra admission conditions. Some programmes have extra admission conditions, in addition to more general requirements. Whenever this is the case, these conditions are specified in the programme profile.

### **2.3 Qualification awarded**

Following the course outlined will lead to the graduate degree, “Master of Science in Enterprise System Implementation”. Depending on electives chosen further specialisations are possible, such as business architecture, project management, change management, information management, knowledge management, and so forth.

When the programme is offered as a MBA programme, the degree of Master of Business Administration (MBA) is awarded.

### **2.4 Access to further studies**

Following graduation from this Master programme, a range of options will be open to the student. In addition to the possibility for the student to engage in further research at doctoral level, CPD/LL programmes are offered by practitioner communities and association programmes. Students will be guided appropriately by individual course tutors and institutional representatives.

## 2.5 Modules in the reference curriculum

The proposed curriculum will be a 2-year Master's level programme of 120 European Credits (EC) in accordance with the European Credit Transfer System (ECTS) guidelines. The core of the curriculum consists of the following modules:

- Enterprise information systems (EIS)
- Business innovation management (BIM)
- Organisation analysis and design (OAD)
- Business process analysis and engineering (BPAE)
- Organisation readiness for information system implementation (ORISI)
- Change management (CM)
- Project management (PM)
- Business case and project finance (BCPF)
- Individual dissertation / final project

The programme structure, in addition to an outline of the full 2-year programme is proposed below. The 2-year programme provides flexibility for adaptation to local situations. In particular, the addition of elective modules depends on existing local modules and preferences (see section 2.5). The modules listed will be described in detail in WP3 and WP5 of the MI-EIS project.

As the outlined programme is a 2-year master programme of 120 EC, use of the programme for a MBA programme may require selection of modules, replacement of some by others, or addition of new ones.

## 2.6 Programme Structure

Below, the list of programme modules is structured in three areas: basic modules, management modules, and methods and tools. The modules are listed with their acronyms (see section 2.5). For each module the workload is given in European Credits (ECs):

<i>Basic modules</i>	EIS 10 EC ORISI 10 EC
<i>Management modules</i>	OAD 5 EC CM 5 EC BIM 5 EC
<i>Methods and tools</i>	BPAE 5 EC PM 5 EC BCPF 5 EC

The total amount of ECs is 50 EC. Both basic and management modules should be delivered in phases of the programme. The methods and tools module will provide the means with which to deal with practical situations and should follow Basic and Management modules.

To credit the student with professionalism in enterprise system implementation, these modules are considered necessary, but not sufficient. The elective part of the programme provides opportunities for complementing the knowledge and skills

of the compulsory programme core. The timetable of implementation over the academic year could look as follows:

1 <sup>st</sup> Quarter	2 <sup>nd</sup> Quarter	3 <sup>rd</sup> Quarter	4 <sup>rd</sup> Quarter
OAD Elective (e.g., socio-technical thinking)	BIM CM	BPAE Elective	Integration case (10EC)
EIS		Laboratory	
5 <sup>th</sup> Quarter	6 <sup>th</sup> Quarter	Final semester	
PM Elective	BCPF Elective	Final project	
ORISI			

## 2.7 Final project

Students will acquire 30 EC by means of the final project, which is the individual dissertation. This project is the final proof that students have mastered the knowledge and skills necessary to understand and manage an enterprise system implementation project. The project will preferably be undertaken in an industrial context to solve a practical problem in the area of enterprise system implementation. Requirements for this final assignment will be developed later.

## 2.8 Electives

Electives provide some freedom for local implementation of the reference curriculum. Electives therefore make up 40 EC of the course.

Below, a list of potential subjects is provided by way of suggestion as to how the reference curriculum may be designed and implemented in the local situation.

- Business communication
- Worker psychology
- Sociology of the workplace
- Financial management
- Business networks
- Purchase management
- Supply chain management
- Working with different cultures

Electives could also include a practical work-experience placement.

## 2.9 Final examination & Examination and assessment regulations

Final examinations will take place in accordance with the local institution regulations and procedures appropriate to the Master level degree qualification, in conformance to the education system of the country and institution.

### **3 SUMMARY**

A reference curriculum has been presented for education of professionals in enterprise system implementation. The curriculum is a 2-year master level curriculum, which may also be applied in a MBA programme. The reference curriculum provides a basis for local adaptation and implementation.

Local implementation initiatives are described in Local Implementation Plan documents in the MI-EIS project.