

ASIA LINK



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A European Commission Asia-Link Project

Introduction

The MI-EIS project is developing a new specification of modules to be taught as MSc level to deliver state-of-the-art training in theory and practice on managing implementation of enterprise information systems (such as ERP, CRM, PDM, SCM etc.)

The course is developed as a 2-year Master's level programme of 120 European Credits (EC) in accordance with the European Credit Transfer System (ECTS) guidelines.

Eight core modules, which account for 50 EC, have been identified and the content for these is being developed by project partners. Modules are developed in 3 categories:

- Basic modules to build up background,
- Management related modules, and
- Modules for tools and techniques.

Electives and a final year project complement the core modules. These make up 40 EC and 30 EC respectively. A timetable of implementation over the academic year is suggested and can be viewed [here](#).

Please click on the following links to continue reading on: a sample lecture description including schedule and syllabus, and the use of the MI-EIS lecture material for your own purpose.

Teacher teams from Europe and China are developing the specification of these modules. In order to achieve this, related to each course we have set out to define:

- Learning objectives and outcomes,
- Syllabi,
- Teaching approaches and methods,
- Assessment methods, and
- attainment levels.

In this way, not only is course material being developed, but added-value is also being gained in terms of sharing and exchanging teaching methods and student learning approaches, as well as establishing a method for defining modules that meet European Credit Transfer System (ECTS) requirements and local university regulations.

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Basic modules

Enterprise Information Systems (EIS)

The aim of this module is to build up a student's appreciation and understanding of enterprise systems in the context of business practice

Organizational Readiness for Information System Implementation (ORISI)

This module aims to develop thorough understanding of the complexity of information system implementation by means of a literature study and in-depth case study. By understanding the complexity of information system implementation students are expected to contribute to improving the field in theory and practice.

Management modules

Organizational Analysis and Design (OAD)

This module introduces Western organization theory and organization design, organization behaviour on individual, group and business level, and leadership.

Business Innovation Management (BIM)

This module aims to develop a thorough understanding and insight to such aspects as organizing and managing technological innovation, which are required for a company's survival in the market.

Change Management (CM)

The overall aim of this module is to gain an understanding of the management of IS and IT projects and the impact of these projects on individuals, groups and organizations.

Tools and techniques

Business Process Analysis and Engineering (BPAE)

This module aims to develop a student's understanding of business process analysis and engineering through the application of modelling tools, techniques and methodologies. This module prepares the student to carry out business process analysis and improvement in manufacturing and service businesses.

Project Management (PM)

The purpose of this module is to gain an understanding of the management of IS and IT projects and the impact of these projects on individuals, groups and organizations.

Business Case and Project Finance (BCPF)

This module deals with estimation of consequences of implementing an IT system in an organization.

Complementary modules and implementation

Electives

Electives provide some freedom for local implementation of the reference curriculum. 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.

Individual dissertation / final project

In this final assignment students show their ability to practice the knowledge learned in a real-life situation and contribute to solving any problems by developing academically justified solutions and recommendations.

Implementation timetable

The timetable of implementation over the academic year could look as follows

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

Sample lecture description -

Business Process Analysis and Engineering

The following table provides an overview of lectures and syllabus for the Business Process Analysis and Engineering (BPAE) module. This module aims to develop the student's understanding of business process analysis and engineering through the application of modelling tools, techniques and methodologies. This module prepares the students to carry out business process analysis and improvement in manufacturing and service businesses. Lecture material and a guide which outlines student and lecturer preparation, additional student tasks, reading lists, resources, assignments and teaching methods was developed. If you would like to request more information or are interested in using the material developed in this project in a commercial or academic environment, please contact us (see last page for contact details).

Business Process Analysis and Engineering			
Session	Contact hours	Content Description & Assignments	
Business Process Management (BPM)			
1	1.1	1hr	Introduction Introduction to the module, expectations regarding the roles of students and module leader / lecture team, and the types of teaching methods to be used. Outline of course aims and required input from students. Definitions and characteristics of business processes, historic overview of important concepts and milestones.
	1.2	1h	Business Process Management Introduction to context, definitions, principles and benefits of business process management; Process vs functional management; ISO 9000:2000; EFQM model
	1.3	2h	BPM - Business level Business level process characteristics; APQC process framework; Business drivers for process changes
	1.4	2h	BPM – Operational level Introduction to operational level of business processes and workflow; Practical exercise to experience workflow in different work organization styles

Business Process Modelling and Simulation

2	2.1	2h	<p>Charting methods</p> <p>Operation process chart, Flow process chart, Both hands process chart, Multiple activity chart, Operation sheet, Bill of material, Methods design selection, Material flow chart, Material flow analysis, Questioning techniques and interviews to collect data for process modelling, Practical exercise to train interviewing to collect data for process modelling</p>
	2.2	2h	<p>UML</p> <p>Background, What is UML (why use it, ways to use it), classification of diagrams, structure and behaviour diagrams, requirements capture, types of UML diagrams (Use case, Class, Activity, Sequence), UML software tools (Rational Rose, Together Control, Poseidon, Microsoft Visio, Telelogic), Student exercise to use UML</p>
3	3.1	2h	<p>IDEF</p> <p>Structured analysis, IDEF background and concept, IDEF₀ modelling process, activities, links, decomposition, model building, sample IDEF₀ models, IDEF₃ modelling, syntax, UOBs, links, junctions, decomposition, numbering, Student exercise to apply IDEF₀ and IDEF₃ modelling technique</p>
	3.2	2h	<p>ARIS</p> <p>Integrated Information Systems, ARIS approach, Requirements definition, Design specifications, Implementation description, comparison with other modelling approaches, ARIS software – products and modules, Integrated product development processes (case), ARIS in practice (case study in business process change management and business process automation), Student exercise</p>
4	4.1	2h	<p>Modelling and simulation - Software tools</p> <p>When and why to use simulations and modelling, Steps in simulation projects, Level of detail in modelling; Verification, validation, credibility; Risks and benefits of simulation; Software packages and vendors;</p> <p>Student task on the selection of a software package, which is to be presented during the next session</p>
	4.2	2h	<p>Group presentations on “Modelling and simulation - Software tools”</p> <p>Group presentations of student task</p>

Business Process Improvement			
5	5.1	1h	Improvement Principles Time measurement, Motion economy, Processes with data and knowledge, Impact analysis, Cost of quality, Sign-off and buy-in, Student exercise or case study
	5.2	1h	Key Performance Indicators Measures of business and process performance, Keegan (1989) matrix, Cross (1989) pyramid, Fitzgerald (1991) model, Balanced Scorecard, Neely (2000) prism, KPIs, KPIs in business processes, Student exercise
	5.3	1h	Business Process Re-engineering History, roots and context, concept definition, methodology, BPR needs/readiness analysis, BPR in practice, benefits, success and failure, criticism, the role of IT and enterprise systems, 2 case studies
	5.4	2h	Running improvement workshops Process workshops (When, why, how manage, participants, roles, objectives), tools and techniques required FAST (Fast Analysis Solution Technique), process improvement teams and improvement tools, 2 Group exercises: running workshops to map a processes
6	6.1	1h	Six Sigma History, the Six Sigma approach, scope, improvement cycles (DMAIC, PDCA), DMAIC cycle in more detail (define, measure, analyse, improve, control), Service Quality Concepts, Six Sigma vs. TQM vs. Lean, applications, implementation
	6.2	2h	Lean processes Perspectives on lean principles (customer and company), history of lean, Ford and Toyota production system, mass vs. lean production (design, supply chain, factory), lean principles, lean techniques, Theory of constraints (TOC), Lean vs. Six Sigma vs. TOC, 2 case studies
	6.3	2h	Value stream mapping Value stream mapping and extended value stream mapping, concept, why to do it, value stream management, mapping tools in context of 7 wastes, creating maps: current state and future state maps, mapping icons, demand amplification, quality and delivery screen, student exercise

Case study sessions			
7	7.1	3h	Case studies - session 1 Discussion of 3 case studies; Common themes of chosen case studies: Process improvement projects, Change drivers
	7.2	3h	Case studies - session 2 Discussion of 3 case studies; Common themes of chosen case studies: Design stage issues, Requirements definition, Pre-implementation choices
	7.3	3h	Case studies - session 3 Discussion of 3 case studies; Common themes of chosen case studies: Implementation and after-implementation issues, ERP / integrated systems
Business Process – IT and outsourcing			
8	8.1	3h	Business Process Outsourcing Outsourcing (what, why, when), Outsourcing market, sourcing models and arrangements, core competency definition, outsourcing trends, outsourcing process, supplier evaluation, selection criteria for outsourcing partners, IT (services) outsourcing, risks assessment, Student exercise

Using the MI-EIS lecture material for your own purpose

The Mi-EIS reference curriculum is in the public domain. We encourage like minded colleagues to enter into the subject and promote the development of human capital to successfully implement information systems in enterprises.

There is a bigger body of material in the detail definition of the eight score subjects and the teaching material for each of these subjects. This part of the project results is proprietary to the consortium partners. This material could be available under licence. If you are interested in using the MI-EIS lecture material in part (specific modules) or as a whole for your purpose, whether in academic or industry environment, please do not hesitate to contact us. Also, the MI-EIS team will be glad to answer your questions related to the project or course. Please see below for contact details.

Contact

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The Asia-Link Programme was launched at the beginning of 2002 as an initiative by the European Union (EU) to foster regional and multilateral networking between higher education institutions in EU Member States and South Asia, South-East Asia and China. This five-year programme, which has a total budget of €42.8 million, aims to provide support to European and Asian higher education institutions in the areas of human resource development, curriculum development and institutional and systems development. See http://europa.eu.int/comm/europeaid/projects/asia-link/index_en.htm for more info.

This document has been produced with the financial assistance of the European Union. The contents of this document are the sole responsibility of the MI-EIS Consortium and can under no circumstances be regarded as reflecting the position of the European Union

