SUMMARY

The student learns business and IT alignment through: 1) experiencing business operations in a serious game; 2) analyzing business requirements and designing business & IT services; 3) implementing a workflow prototype (BPMN).

The student is exposed to standards (ISO 9K, ITIL) & frameworks (SOA, EA).

CONTENT

1) Business Part (4 weeks): practical experimentation and theoretical understanding of the key business processes of a manufacturing company: rfq process, development, planning, quality management and accounting.

2) Business / IT Part (6 weeks): specification of an IT system that provides after-sales service. We teach the following techniques: interviews, root cause analysis, analysis/design of the business services and of the IT services. The underlying theory is system thinking (Weinberg, Vickers) and the ISO/IEC standard RM-ODP.

3) IT Part (2 weeks): implementation - using BPMN visual programming - of an IT system prototype. Overview of the technological aspects of service-oriented architecture (wsdl, bpel, soap).

4) Enterprise Architecture & Conclusions (2 weeks): Overview of the enterprise architecture frameworks (Zachman, TOGAF, Urba-EA). Synthesis and key learning points of the course.

KEYWORDS

RFQ, quotation, purchase order, leadtime, bill of material, development process, V process, spirale process, manufacturing planning, quality system, traceability, ISO 9000, financial statements, year-end book closing, ERP, interview, contextual inquiry, root-cause analysis, ITIL, business service, IT service, requirements engineering, SEAM system modeling, SEAM goal-belief modeling, SEAM behavior modeling, Vickers appreciative system, behavioral refinement, information modeling, service-oriented architecture (SOA), BPMN, BPEL, WSDL, SOAP, enterprise architecture (EA), Zachman, TOGAF, Urba-EA, Systemic paradigm, epistemology, ontology, axiology, ethics.

LEARNING OUTCOMES

By the end of the course, the student must be able to:

- Describe business processes (sales, engineering, manufacturing, accounting)
- Assess / Evaluate business processes using ISO9000
- Coordinate business operations (role play)
- Analyze business needs for an IT system design
- Assess / Evaluate the IT processes using ITIL
- Conduct interviews with business stakeholders
- Formalize business requirements for an IT system design
- Design BPMN / BPEL workflow

Transversal skills
• Continue to work through difficulties or initial failure to find optimal solutions.
• Use both general and domain specific IT resources and tools
• Write a scientific or technical report.
• Collect data.
• Make an oral presentation.
• Summarize an article or a technical report.

TEACHING METHODS
Problem-based teaching

ASSESSMENT METHODS
With continuous control

RESOURCES
Bibliography


Tools:
Alloy http://alloy.mit.edu/alloy/
Intalio http://ww.intalio.com/
SeamCAD http://lams.epfl.ch/seamcad/

Ressources en bibliothèque
- Declarative Specification and Alignment Verification of Services in ITIL / Rychkova
- Service Systems and Value Modeling from an Appreciative System Perspective / Regev
- Where do Goals Come from: the Underlying Principles of Goal-Oriented Requirements Engineering / Regev
- Contextual design / Beyer
- Quality Management Systems / ISO
- Introduction to BPMN / White
- Intalio
- On the Systemic Enterprise Architecture Methodology / Wegmann
- Defining Early IT System Requirements with Regulation Principles / Regev
- A Language and Tool for relational models
- Augmenting the Zachman Enterprise Architecture Framework with a Systemic Conceptualization / Wegmann
- A framework for information systems architecture / Zachman
- An Introductory Overview of ITIL v3 / ITSMF

Références suggérées par la bibliothèque