

How ISDP (master course) can influence JCSE (new topics)

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AGENDA

- 1. Introduction
2. ISDP Course Structure
3. Possible topics for JCSE
4. Conclusions



ISDP-C-06 – IS Development Process

1. Introduction

- ❑ It is developed under the TEMPUS project “Joint MSc Curriculum in Software Engineering”
- ❑ The course established a regional wide master’s software engineering curriculum with international recognition (3 institutions from Serbia, 1 from Macedonia)
- ❑ The ISDP master course has been realizing jointly by staff from two countries/institutions (Novi Sad, Skopje)

1. Introduction

The course approach

- ❑ History:
 - different courses in various fields were part of master studies (supervision/no classes)
 - courses give students mostly general/’theoretical’ knowledge in different ICT topics
- ❑ Today:
 - master studies (regular classes) must focus on appropriate/specific technologies, methodologies and tools in particular domain

1. Introduction

Don't forget:

- ❑ Integration trends in European area
- ❑ Intensive student mobility
- ❑ Orientation to European-wide labour market for ICT graduates

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2. ISDP Course Structure

ISDP master course

- ❑ Master course was designed, primarily to cover advanced IS topics
- ❑ It covers a few important aspects of information system development:
 - the selection of methodology
 - the evaluation of methodology
 - the management of the systems development process

2. ISDP Course Characteristics

Master course topics

- ❑ Information System Development (ISD):
 - review of major concepts;
 - lifecycles;
 - definition of a 'methodology';
 - the factors influencing methodology use;
- ❑ A variety of ISD paradigms and methodologies:
 - object-oriented methodologies (Rational) Unified Process
 - structured methodologies (SSADM)
 - 'soft' methodologies e.g. Soft system methodology
 - participative approaches e.g. DSDM, ETHICS
 - integrated approaches e.g. Multiview

2. ISDP Course Characteristics

Master course topics

- Special applications and their methodology requirements e.g. Web information systems
- Issues concerning the introduction and use of methodologies
- Framework for methodology evaluation
- Ethical aspects of ISD

2. ISDP Course Characteristics

Master course topics – Additional planned activities

The emphasis throughout has to be on the comparison and evaluation for specific contexts of the methodologies covered.

- The nature of the project, its components, risks, success factors and associated politics.
- Information Systems investment justifications: approaches to investment appraisal.
- Identification and management of benefits; assessing the intangibles.
- Organisation of systems development: reporting structures.
- Project planning and control: work breakdown structures; estimation, budgeting, planning methods (PRINCE 2).

2. ISDP Course Characteristics

Master course topics – Additional planned activities

The emphasis throughout has to be on the comparison and evaluation for specific contexts of the methodologies covered.

- ❑ Project administration: tracking and reviewing; configuration management and change control.
- ❑ Staff management, motivation, leadership.
- ❑ Quality Management, standards and accreditation.
- ❑ Managing software project risks.
- ❑ Managing object-oriented projects (reuse): rapid application development (e.g., DSDM, XP)
- ❑ Managing large-scale projects: implementation and post-implementation review.

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3. Possible topics for JCSE

3.1. Information system development process methodologies

3.2. WEB Information Systems

3.3. Agent methodologies (?)

3. Possible topics for JCSE

3.1. ISDP methodologies

- 1. Process-oriented methodologies
- 2. Blended methodologies
- 3. Object-oriented methodologies
- 4. Rapid development methodologies
- 5. People-oriented methodologies
- 6. Organizational oriented methodologies

3. Possible topics for JCSE

3.1. ISDP methodologies – in details

- ❑ 1. Process-oriented methodologies
 - 1.1 Structured analysis, design and implementation of information systems (STRADIS)
 - 1.2 Yourdon Systems method (YSM)
 - 1.3 Jackson Systems development (JSD)
- ❑ 2. Blended methodologies
 - 2.1 Structured systems analysis and design method (SSADM)
 - 2.2 Merise methodology
 - 2.3 Information Engineering (IE)
 - 2.4 Welte ERP development
- ❑ 3. Object-oriented methodologies
 - 3.1 Object-oriented analysis (OOA)
 - 3.2 Rationale unified process (RUP)

3. Possible topics for JCSE

3.1. ISDP methodologies - in details

- ❑ 4. Rapid development methodologies
 - 4.1 James Martin's RAD
 - 4.2 Dynamic systems development method (DSDM)
 - 4.3 Web Information Systems Development Methodology (WISDM)
- ❑ 5. People-oriented methodologies
 - 5.1 Effective technical and human implementation of computer-based systems (ETHICS)
 - 5.2 KADS
 - 5.3 CommonKADS
- ❑ 6. Organizational oriented methodologies
 - 6.1 Soft systems methodology (SSM)
 - 6.2 Information systems work and analysis of change
 - 6.3 Process innovation
 - 6.4 Projects in controlled environments
 - 6.5 Renaissance

3. Possible topics for JCSE

3.2. WEB Information Systems

- 1. The Semantic Web: RDF and RDF Schema
- 2. OWL – The Web Ontology Language
- 3. WIS & Engineering Web Trends
- 4. Semantic Web Tools and Applications
- 5. Presenting Knowledge Semantic Web User Interaction
- 6. Business-Driven Development of Business Solutions

3. Possible topics for JCSE

3.2. WEB Information Systems – in details

- 1. The Semantic Web: RDF and RDF Schema
 - Metadata,
 - Ontology,
 - Standards,
 - Semantics of RDF Schema,
 - Query Language for RDF

3. Possible topics for JCSE

3.2. WEB Information Systems – in details

□ 2. OWL – The Web Ontology Language

- XML → RDF → RDF Schema
- Further extensions are possible and necessary
- OWL is such an extension:
 - based on OIL and DAML+OIL
 - it adds additional modeling primitives
- These extensions enable **knowledge** on the web; together with structured **data**, this can be used for semantic web applications

3. Possible topics for JCSE

3.2. WEB Information Systems – in details

□ 3. WIS & Engineering Web Trends

- **WIS Engineering Methodology** (*Relationship Management Methodology*, RMDM: Relationship Management Data Model, *Model-driven, Hypermedia*)
- **WIS Engineering and Adaptation**
- **Semantic Web & Web 2.0**
- **Social Networking** (*Folksonomies, Flickr, del.icio.us*)
- **Ajax Technology**

3. Possible topics for JCSE

3.2. WEB Information Systems – in details

□ 4. Semantic Web Tools and Applications

- **Sorts of Applications** (Developer Tools, End-user applications (Information Sharing, Collaborative filtering, Personalization), Extracting and Querying, Creation Tools, Transformation tools, Visualization tools)

- **Selection of End-User Applications**

3. Possible topics for JCSE

3.2. WEB Information Systems – in details

□ 5. Presenting Knowledge Semantic Web User Interaction

- **Semantic Interface Components**
(Selection, Browse, Visualize, Annotate)

- Demonstration of Current Projects

3. Possible topics for JCSE

3.2. WEB Information Systems – in details

- 6. Business-Driven Development of Business Solutions
 - Different projects and examples

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4. Conclusion

- New/contemporary topics are necessity for innovations and improvements of the JCSE
- Teachers can choose and make selection depending on students' wishes/needs/quality
- Follow labor trends and needs

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