ISSSR 20126- 2017

9 Credits

Software Systems Engineering & Networked Services Engineering

00. Introduction to the course

THE 2016-2017 TEACHING EXPERIMENT

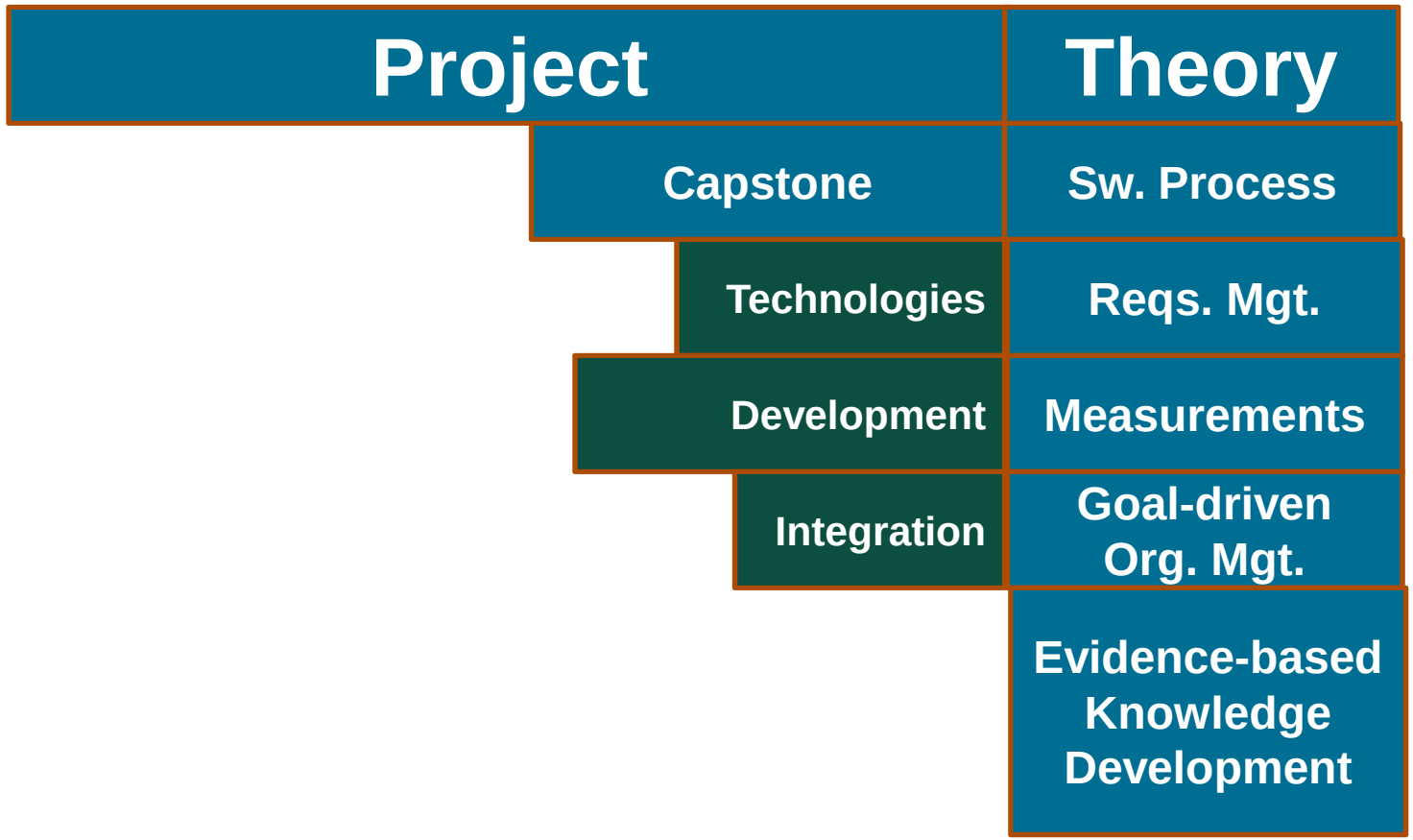
Project	Theory

Why?

- Goal

Past ISSSR's students evaluated high the quality but quite high also the involved effort (rate Hours of work due/Num. of credits obtained). Consequently, the optional weekly lab. meeting, which was run in the last academic years, is cancelled.

CONTENTS AND RELATIVE DURATIONS



STRUCTURE - OUTLINE

There are five tracks planned:

1. CT — Basic Track
2. PMMT — Process & Project Management, and Requirements Elicitation
3. CPT — Capstone (Project) Tracks
4. TT — Technological Track
5. RT — Reuse Track
6. DITT — Development & Integration & Test Track

STRUCTURE (1/6)

CT, Conceptual track

- **Software Metrics**: Theory and practice of the Measurement in Software Engineering.
- **Goal Question Metrics + Strategies**
  - Describes the approach in a nutshell focusing on the ***basic model*** that is created and the ***process*** of how to create and make use of this model.
- **Experimental Software Engineering**: describes the concept related to (evidence-based) science development in the domain of software engineering, and a related process model, its phases, and recommended steps.

STRUCTURE (2/6)

PPMT, Process & Project Management (1 CFU)

- **Open UO & RUP**
- **Requirements management**
- **Use-case Modeling**
- **Project Mgt.: Use-case based Iterative Process.**

STRUCTURE (3/6)

CPT, Capstone (Project) Tracks

Two Balanced (eventually Randomly assigned) Options:

- **Information Mgt. for Performance Improvement, and Automation of Eatery & Beverage Value Chains**
- **Goal-driven Quantitative-based Organization Strategies Alignment for Improvement**

Exception Handling.

STRUCTURE (4/6)

TT, Technological Track

- The question to answer here is what technology we could/should use for the two projects, respectively. Additionally, some technologies will be provided to support development, including group working, information storing, cloud computing, and the execution of an Agile process. In addition, exceptions could be handled by providing IBM tools to enact a RUP-like process.

STRUCTURE (5/6)

RT, Reuse Track.

- What artifacts we can reuse for free. In particular:
  - For the *Information Mgt. for Performance Improvement, and Automation of Eatery & Beverage Value Chains* project: artifacts collected from the net;
  - For the *Goal-driven Quantitative-based Organization Strategies Alignment for Improvement* project: artifacts as developed by students of the past ISSSR courses. Question: why those artifacts did not work in full, what we plan to do.

STRUCTURE (6/6)

DITT, Development & Integration & Test Track.

- We put all together, extend the requirements, develop the extensions, and integrate the parts of, the specific project.

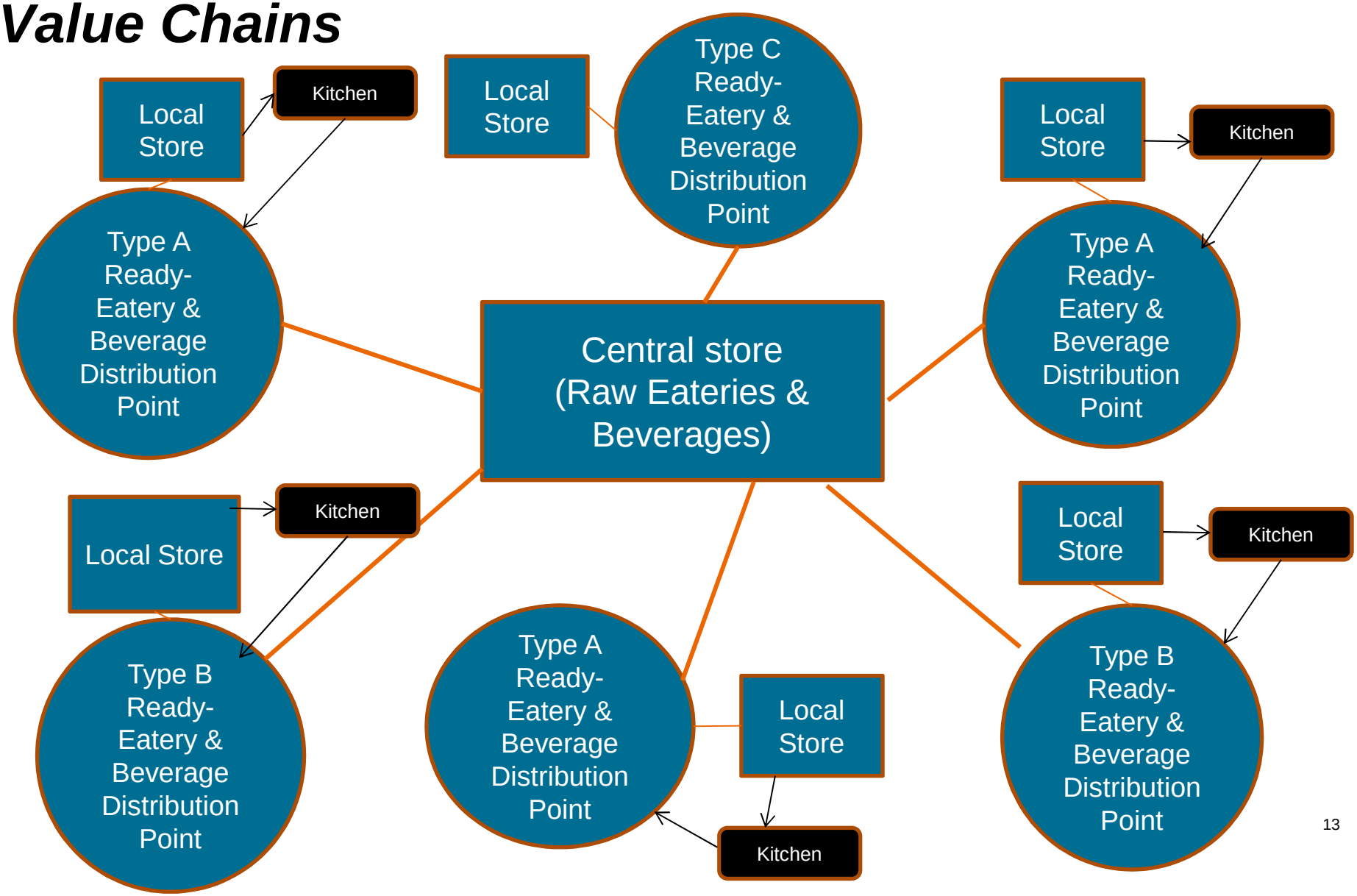
PROJECT

- The goal
- The team
- Range of the admitted results
- How we evaluate the development

SUPPORTING MATERIALS & TOOLS BOTYH PROJECTS

- Service providing platforms & infrastructures (free usage for UoRomaTorVergata ISSSR students)
- Requirements Engineering and Software Architecture Development supporting tools (free usage for UoRomaTorVergata ISSSR students)
- Seminars concerning their usage

PROJECT *Information Mgt. for Performance Improvement, and Automation of Eatery &Beverage Value Chains*



SUPPORTING MATERIALS & TOOLS FOR THE PROJECT *Information Mgt. for Performance Improvement, and Automation of Restaurant & Beverage Value Chains*

- Brainstorming
- Agility
- Requirements elicitation
- Web search

PROJECT *Goal-driven Quantitative-based Organization Strategies Alignment for Improvement*

PROJECT *Goal-driven Quantitative-based Organization Strategies Alignment for Improvement*

- Acquire the recommended steps of all ***stages*** and ***phases*** of the process in detail making use of a comprehensive application example.
  - The first stage (out of three) deals with the ***development of a model*** ("**Grid**") for aligning **goals** and **strategies** through measurement.
  - The second stage involves the ***execution of the strategies and measurements*** defined by the grid.

    This allows us *to check* the *attainment of the goals*, *effectiveness of strategies*, etc.
  - The third stage involves ***learning*** from what has been done by analyzing the results and ***improving*** the process for generating further goals and strategies.

SUPPORTING MATERIALS & TOOLS FOR THE PROJECT *Goal-driven Quantitative-based Organization Strategies Alignment for Improvement*

- Books on:
  - GQM+Strategies®
- Related slides
- Open source software development and documentation tools.

Metriche del software. Esperienze e ricerche

Autori e curatori	Gufpi-Isma
Contributi	Massimiliano Argiolu, Anna Battistata, Luigi Buglione, Danilo Caivano, Giuseppe Calavaro, Gerardo Canfora, Giovanni Cantone, Sandro Capocci, Anna Cavallo, Luigi Cerulo, Massimiliano Conte, Giovanni Denaro, Paolo Donzelli, Raffaele Esposito, Stefano Fabrizi, Loredana Frallicciardi, Claudio Grande, Nicola Iacovelli, Salvatore Iovieno, Luigi Lavazza, Monica Lelli, Stefania Lombardi, Nicoletta Lucchetti, Margherita Martellucci, Roberto Meli, Guido Moretto, Domenico Natale, Davide Pace, Gianfranco Pesce, Mauro Pezzè, Gianluigi Raiss, Luca Santillo, Giuseppe Santucci, Habib Sedehi, Francesco M. Stilo, Maria Tortorella, Luigi Troiano, Giuseppe Visaggio
Collana	Informatica & organizzazioni
Argomenti	Information Technology: testi introduttivi - Sistemi, linguaggi, programmazione
Livello	Testi per professional
Dati	pp. 512, 1ª edizione 2006 (Codice editore 724.36)

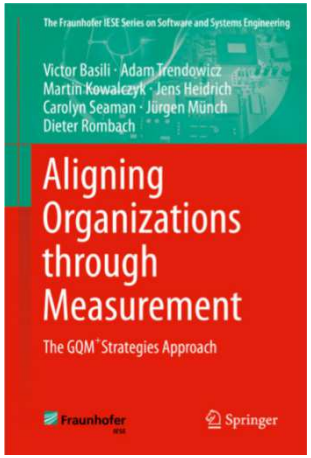
FrancoAngeli

Tipologia: Edizione a stampa
Prezzo: € 45,00
Disponibilità: Discreta

Codice ISBN: 9788846471390

Presente presso la Biblioteca dell'Informazione

The book on



Aligning Organizations Through Measurements. The Goal Question Metric + Strategies Approach

Book authored by Victor Basili, Adam Trendowicz, Martin Kowalczik, Jens Heidrich, Carolyn Seaman, Jurghen Munch,and Dieter Rombach.

Fraunhofer IESE Series on Software and Systems Engineering

29.02.2016

https://www.researchgate.net/publication/258568262_Aligning_Organizations_Through_Measurement_The_GQMStrategies_Approach

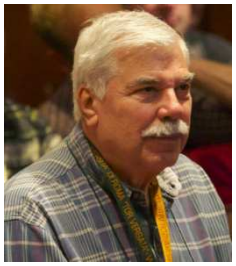
The book on

Experimentation in Software Engineering: An Introduction.

Book authored by Claes Wohlin, Per Runeson, Martin Höst, Björn Regnell, Anders Wesslén

Springer

INSTRUCTORS



TEACHERS

- Giovanni Cantone, Full Professor
- Manuel Mastrofini, Contract Professor, and Turor
- Giuseppe Calavaro, Contract Professor

VOLUNTARY STUDENT ASSISTANTS

- TBD.

TALKS & WORKSHOPS

- A. Bontempi, U. Manganiello, IBM Italia SpA: The Bluemix platform for Cloud computing.
- L. Buglione, Engineering SpA: Function Points and non-Functional Measurements.
- S. Corrieri, Whitehall Reply SpA: Using Angular for front-end development in service oriented applications.
- L. Fanelli, Reply SpA: Connecting Heterogeneous Sw. Subsystems by an Enterprise Service Bus.

LESSONS & LAB

LESSONS

- Monday, from 16:30 – 17.00, room C2 or Lab. Info
- Tuesday, from 16:30 – 17.00, room B1
- Wednesday, from 11.30 – 13.00, room C3

SEMINARS

- Monday, from 14:00 – 19.00, room C2 or Lab. Info.

OPEN LAB & TUTORAGE

- Wednesday, from 16.00 – 19.00, Lab. Info.

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PREREQUISITES

- Fundamentals of:
  - Software engineering.
  - OO Software Analysis and Design.
  - Laptop & Web Application Design.
  - OO Programming.
  - Concurrent Programming.
  - Internet & Web Engineering.
  - Data-bases.
- Design Patterns.
- Elements of Software Process.
- Elements of Requirements Engineering.
- Elements of Verification & Validation, and Testing.

COURSE LIST

- You may want to register to isssr@lists.uniroma2.it to receive info by e-mail from the instructors. Include your given name, family name and the last available university matriculation code. Anonymous registrations will be removed.
- The registration deadline is March 31st of this Academic Year.

COURSE OFFICIAL REGISTRATION

- In order to access to registrations for exams of the academic year 2016-2017, an official pre-registration to the ISSSR course, 2016-2017 issue, is indicated through http://delphi.uniroma2.it/totem/jsp/homeStudenti.jsp.