ISSSR 20125- 2016

9 Credits

Software Systems Engineering & Networked Services Engineering

00. Introduction to the course

STRUCTURE (1/5)

There are four tracks planned:

1. TC Conceptual track
2. TT Technological track,
3. TR&I Reuse & Integration track, and
4. TD&T Development track.

STRUCTURE (2/5)

TC, Conceptual track

- **Software Metrics**: Theory and practice of the Measurement in Software Engineering.
- **Goal Question Metrics + Strategies**
  - TC GQM+S, P1: 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.
  - TC GQM+S, P2..9: describe the recommended steps of all ***stages*** and ***phases*** of the process in detail making use of a comprehensive application example.

STRUCTURE (3/5)

- TC GQM+S, P2..9: (Continued)
  - The first stage (out of three) deals with the ***development of a model*** ("**Grid**") for aligning **goals** and **strategies** through measurement.

    The key benefit of having such a model is the ability to *reach a consensus* of goals and strategies and *communicate that consensus* to the entire organization (Parts 3, 4, and 5).
  - 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. (Parts 6 and 7).
  - The third stage involves ***learning*** from what has been done by analyzing the results and ***improving*** the process for generating further goals and strategies (Parts 8 and 9).

- **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 (4/5)

TT, Technological track

- The question to answer here is what technology we could/should use for the entire project and for each phase; we make our choices and explain the why.

R&IT, Reuse & Integration track.

- What we can reuse from the part courses, why they did not work, what we plan to do.

STRUCTURE (5/5)

TD, Development & Test track.

- We put all together, extend, develop the extensions of, and integrate the parts of, the GQM+S® support tool.

SUPPORTING MATERIALS & TOOLS

- Books on:
  - GQM+Strategies®
  - Experimental Software Engineering
- Related slides
- Open source software development and documentation tools.
- 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 the last three points above.

Metriche del software. Esperienze e ricerche

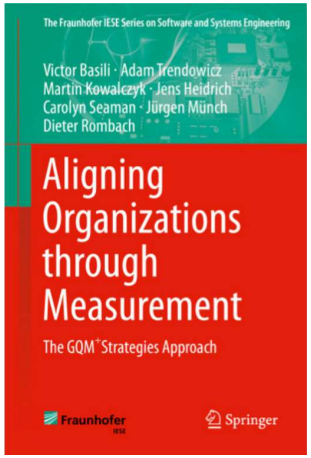
Autori e curatori	Gufpi-Isma
Contributi	Massimiliano Argiolu, Anna Battistata, Luigi Buglione, Danilo Caivano, Giuseppe Calavaro, Gerardo Canfora, Giovanni Cantone, Sandro Capocci, Anna Cavallo, Luigi Cerulo, Massimiliano Conte, Giovanni Denaro, Paolo Donzelli, Raffaele Esposito, Stefano Fabrizi, Loredana 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)

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

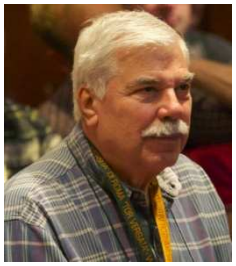
The book on

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, Adjunct Professor (To be Confirmed)
- Giuseppe Calavaro, Adjunct Professor (For part of the class only)

VOLUNTARY STUDENT ASSISTANTS

- TBD.

TALKS

- IBM people (TBD): The Bluemix platform for Cloud computing, P. Subiaco: Rational Sw. Architect, Team Concert, etc.
- L. Buglione, Engineering SpA: Function Points and non-Functional Measurements

LESSONS & LAB

LESSONS

- Monday, from 16:30 – 17.00, room C2
- Tuesday, from 16:30 – 17.00, room B1
- Wednesday, from 11.30 – 13.00, room B1

SEMINARS

- Monday, from 14:00 – 19.00, room C2 or Lab. Info.
- Thursday, from 16:30 – 19.00, Lab. Info.

OPEN LAB & TUTORAGE

- Thursday, from 16:30 – 19.00, Lab. Info.

PREREQUISITES

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

YOUR DATA, BACKGROUND, AND PREFERENCES

- Collection of the attendees' Given Name, Family Name, Background (e.g., ISPW 9 CFU | POO 5CFU && SwE 5 CFU | Others to specify), and Preferred project meeting period (e.g., 1 week, 4 weeks) and software process (Agile/Scrum | RUP).
- Attending the course is indicated as mandatory. Workers, who are expected not to attend every lesson of the course, are invited to register for the RUP-based projects or to try to obtain a special assignment.

QUESTIONNAIRE

- What is my background, what are my expertise and experience?
- What is my status (Full | Part time Student; Full | Part time Worker in the Sw. Eng. | Other Domain)
- What I expect to get from this course?
- How should I obtain it?
  - What I hope they will tell me I should do in order to obtain that?
  - What I would like to do in order to obtain that?
  - How many hour per week I can work for this course?

Collect answers, characterize them an synthesize results.

COURSE LIST

- You may want to register to isssr@lists.uniroma2.it to receive info by e-mail from the teachers.
- The registration deadline is March 31th, 2016.

COURSE OFFICIAL REGISTRATION

- In order to access to registrations for exams of the academic year 2015-2016, an official pre-registration to the ISSSR course, 2015-2016 issue, is indicated through http://delphi.uniroma2.it/totem/jsp/homeStudenti.jsp.