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

00. LESSON 1

Concepts.
Development of a Supporting Tool.
Advanced Development Technologies.

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.

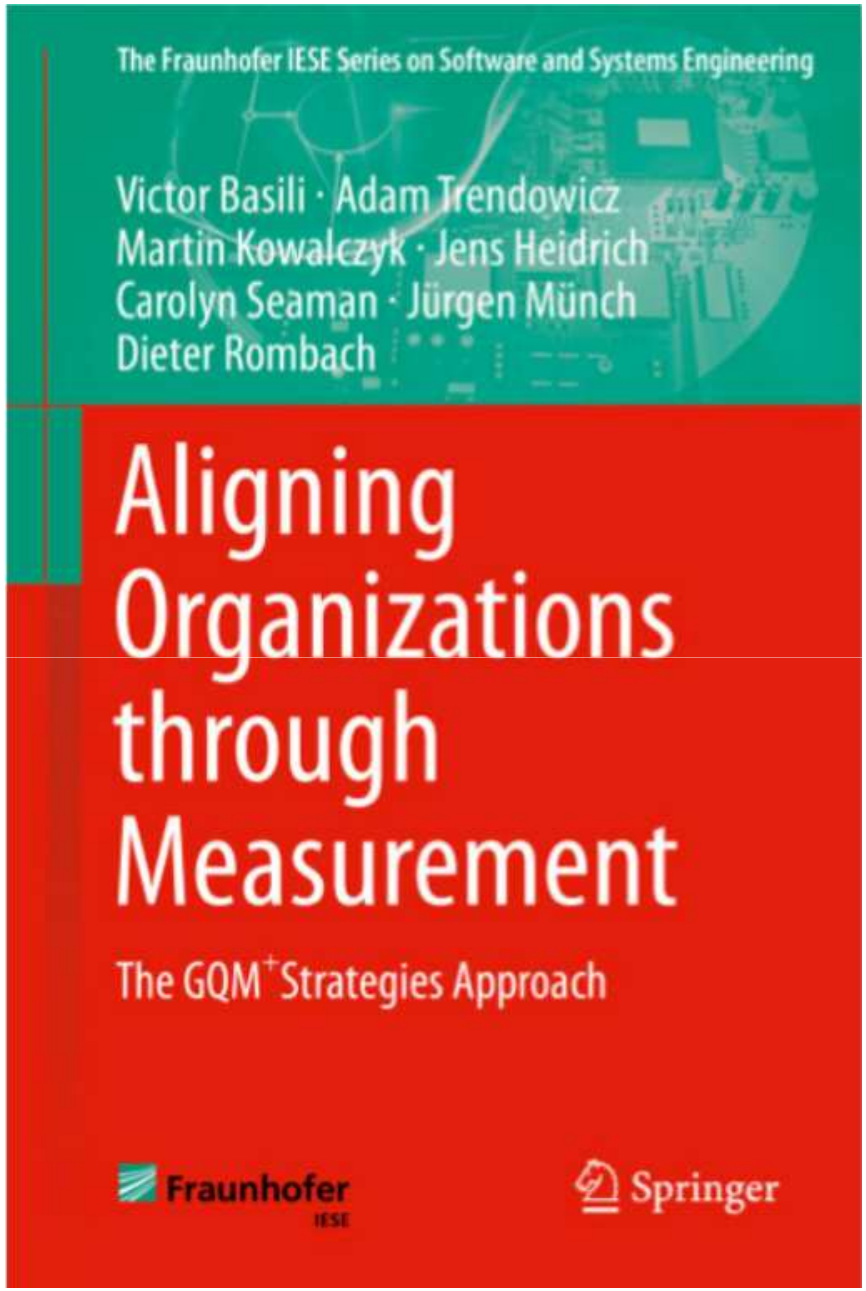
The book on

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



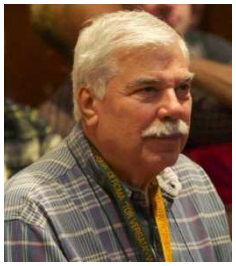
The book on

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
- Giuseppe Calavaro, Adjunct Professor (for part of the class)

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 16:30 – 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.