

# Modeling and Analysis Overview

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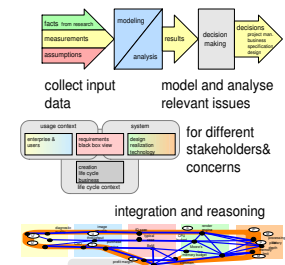
`www.gaudisite.nl`

## Abstract

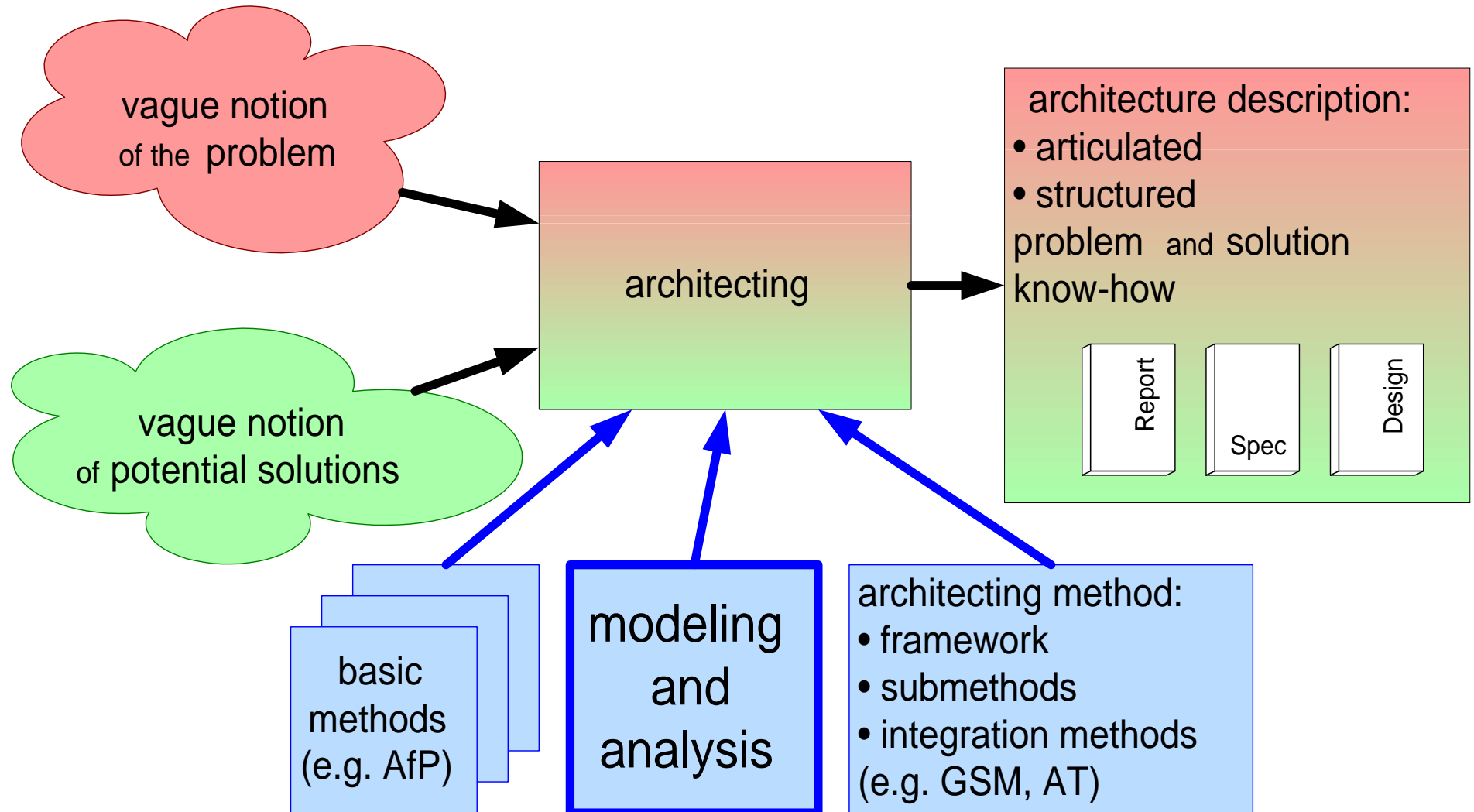
The course Modeling and Analysis is described. The program consists of 10 modules. The course format, iterating theory, illustration and interaction is explained. The course heavily emphasizes the practical application of the method. This presentation shows the overview of the modeling and analysis approach and the methods and techniques that will be elaborated in the rest of the course.

The complete course MA 611<sup>TM</sup> is owned by Embedded Systems Institute. To teach this course a license from Embedded Systems Institute is required. This material is preliminary course material. The final material and course information can be found at: [www.esi.nl/cursus](http://www.esi.nl/cursus).

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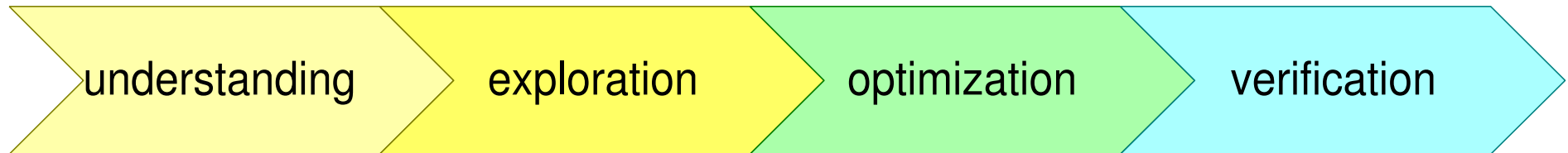


# Positioning Modeling and Analysis in Architecting



# Modeling and Analysis supports:

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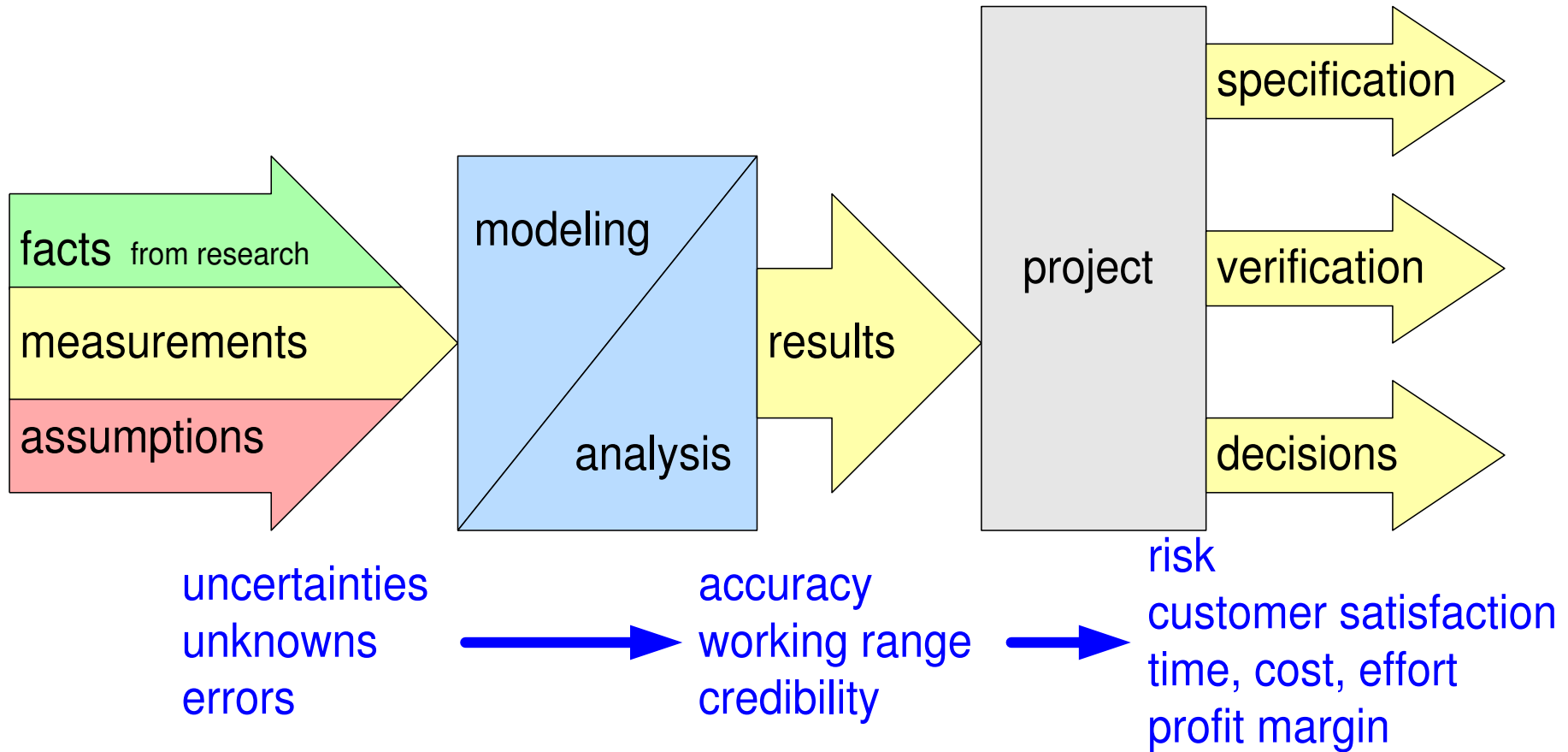
Type of model depends on project phase

Models have a goal

Goals evolve and models evolve

Techniques are used to reach this goal

# Purpose of Modeling



# What to Model?

*business :*

profit, etc.  
operational costs  
stakeholder benefits  
workload  
risks

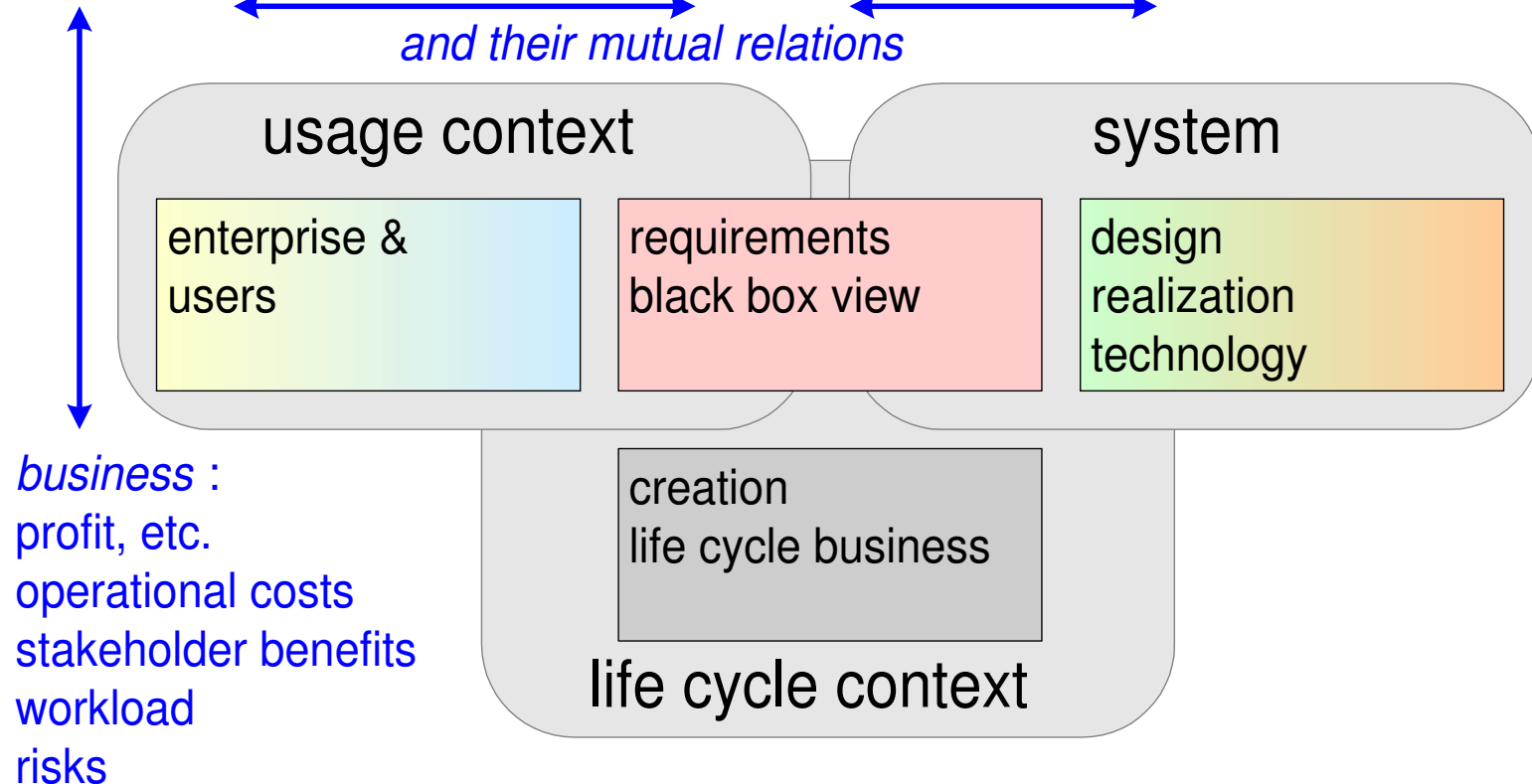
*key performance :*

throughput, response  
reliability  
availability  
scalability  
...

*(emerging?) properties :*

resource utilization  
load  
latency, throughput  
quality, accuracy  
...

and their mutual relations



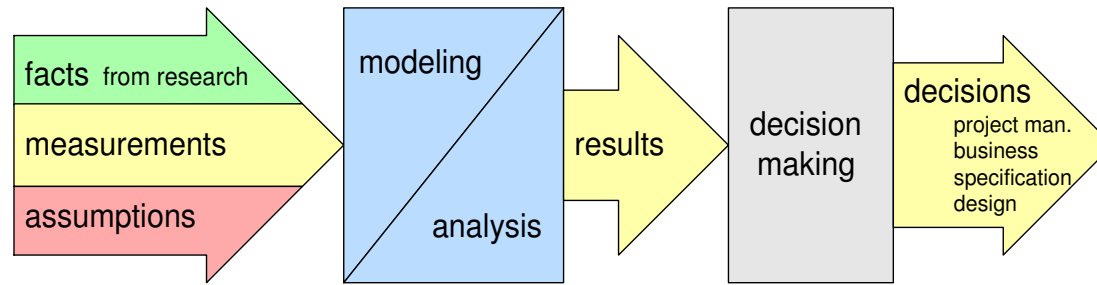
*business :*

profit, etc.  
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# Program of Modeling and Analysis Course

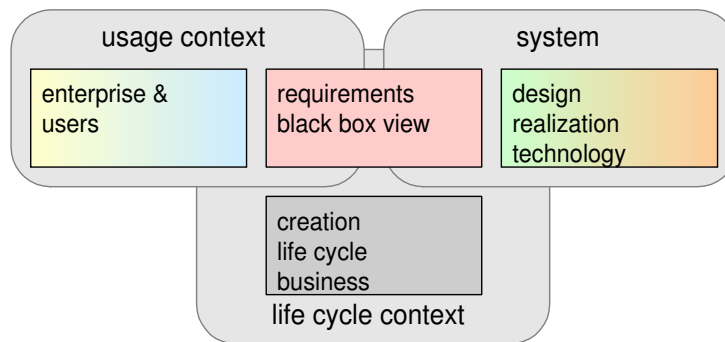
day 1	1. overall approach intro, overall approach, exercise overall approach
	2. input facts, data, uncertainties quantification, measurements, modeling, validation, technology background, lifecycle and business input sources
day 2	3. system modeling purpose, approaches, patterns, modularity, parametrization, means, exploration, visualization, micro-benchmarking, characterization, performance as example
	4. application, life-cycle modeling reiteration of modeling approach (see module 3), applied on customer application and business, and life cycle
day 3	5. integration and reasoning relating key driver models to design models, model based threads of reasoning, FMEA-like approach, modeling in project life-cycle
	6. analysis, using models sensitivity, robustness, worst case, working range, scalability, exceptions, changes

# Overview of Approach



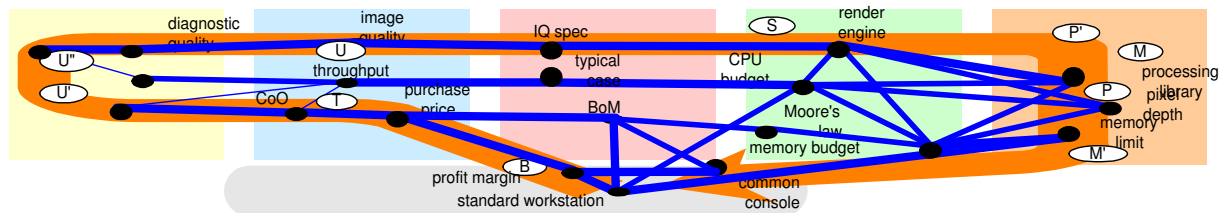
collect input data

model and analyse relevant issues



for different stakeholders & concerns

integration and reasoning



# Iteration over viewpoints

