

Industry Master in a Nutshell

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Abstract

When educating systems engineers, students need a practical reference framework that complements the theory. The Industry Master Model is using an approach that includes:

- the students work 50% at a partner company during their study
- a didactic model that ensures deep learning and student-active learning
- industry-as-laboratory master project
- the course "Reflective Practices" running over 3 years
- networks and agreements between the university, partner companies and students

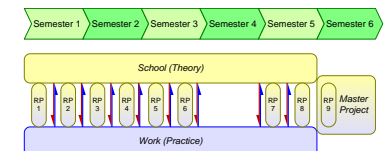
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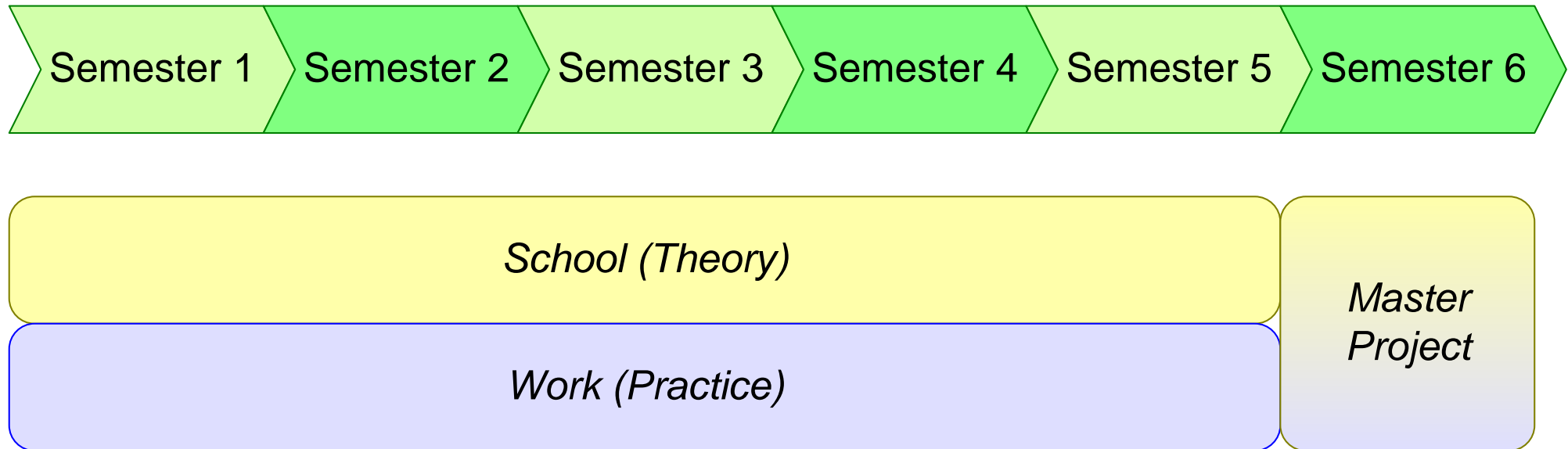
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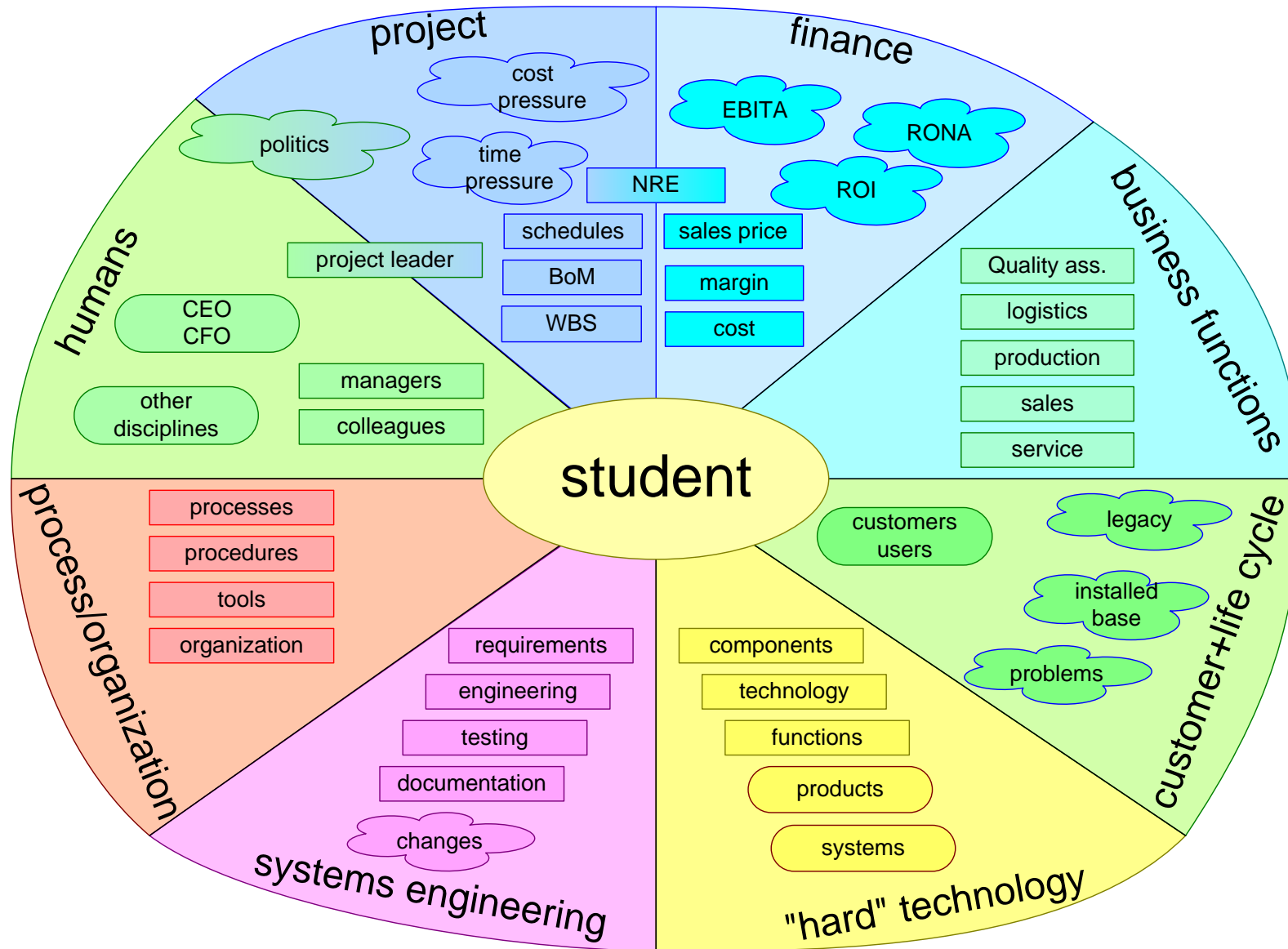
The objective of the industry master in systems engineering is to **accelerate** the **competence development** of new systems engineers, from e.g. 10..20 years in the past to 5..10 years.

Core of the acceleration is **experiential learning**, where offering **theory** and building up **experience** happens **concurrently** and is used to **reinforce learning**.

Work and Study Concurrently



Overload of Impressions for Fresh Bachelors



What is Competence?

Attitude (perseverance, faith, critical, constructive, etc.)

train

Ability (know when to use what skill and knowledge)

apply/use often, experience

Skills (calculate missing angle, calculate hypotenusa)

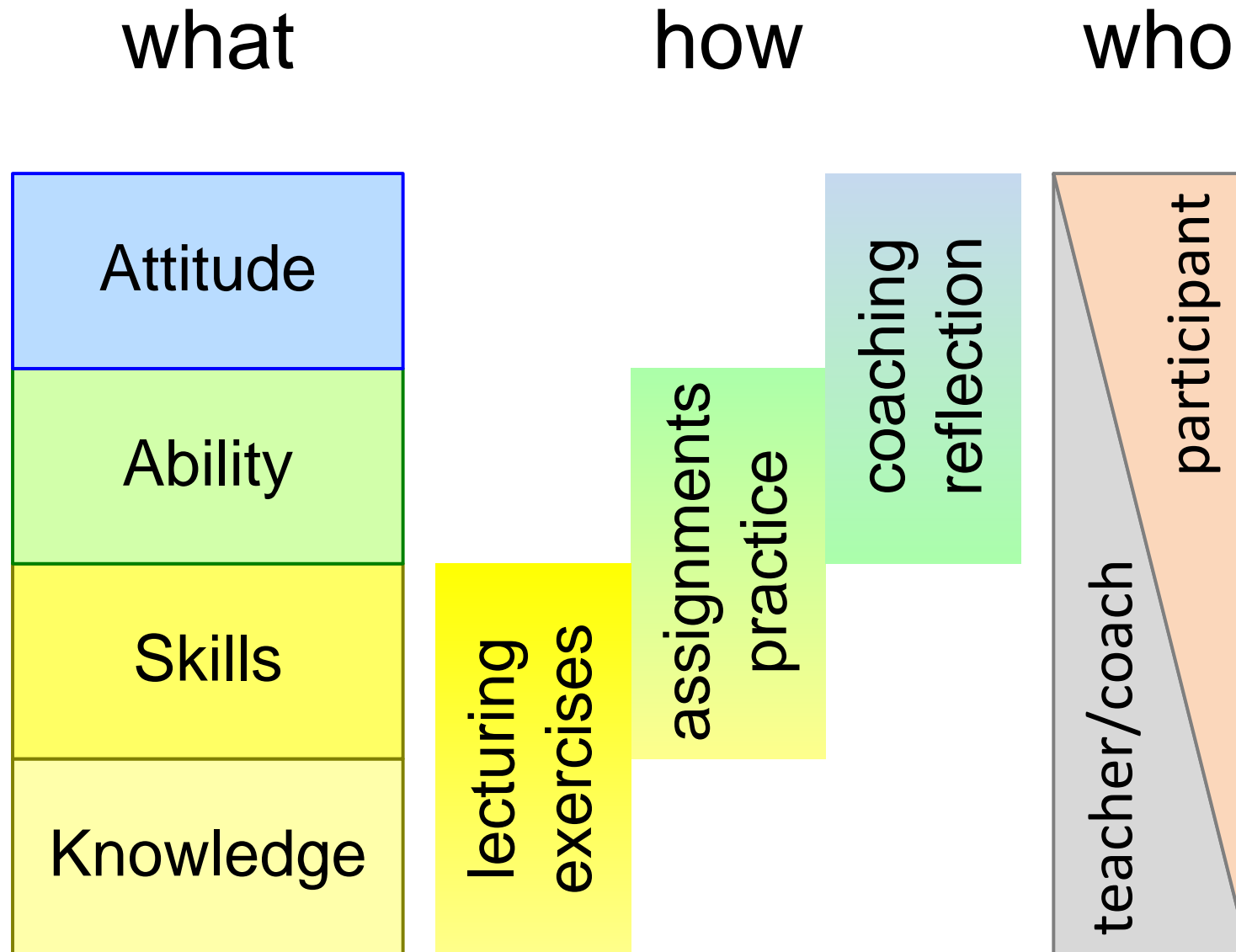
exercise

Knowledge (triangle has 3 corners, sum of angles is 180 degrees, Pythagoras $c^2 = a^2 + b^2$)

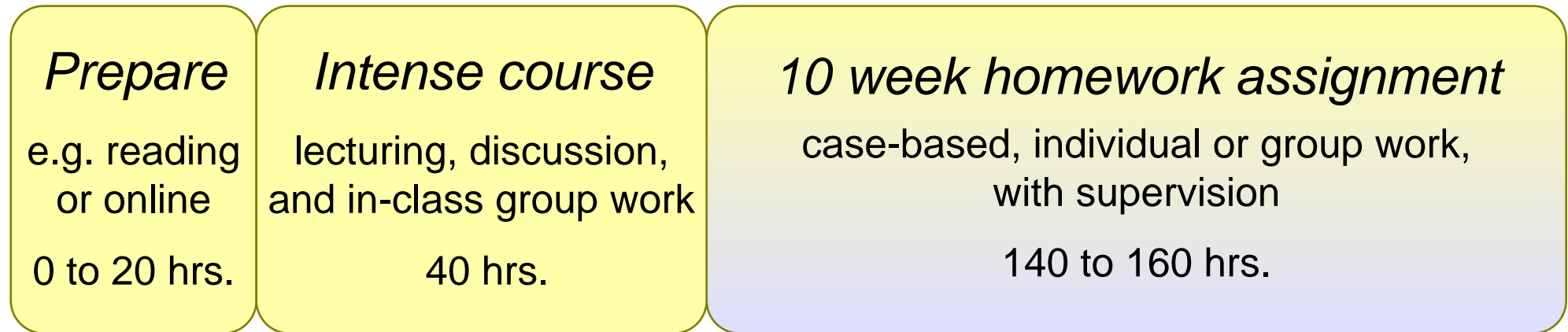
learn

Competence = Knowledge + Skills + Ability + Attitude

Various Ways to Develop Competence

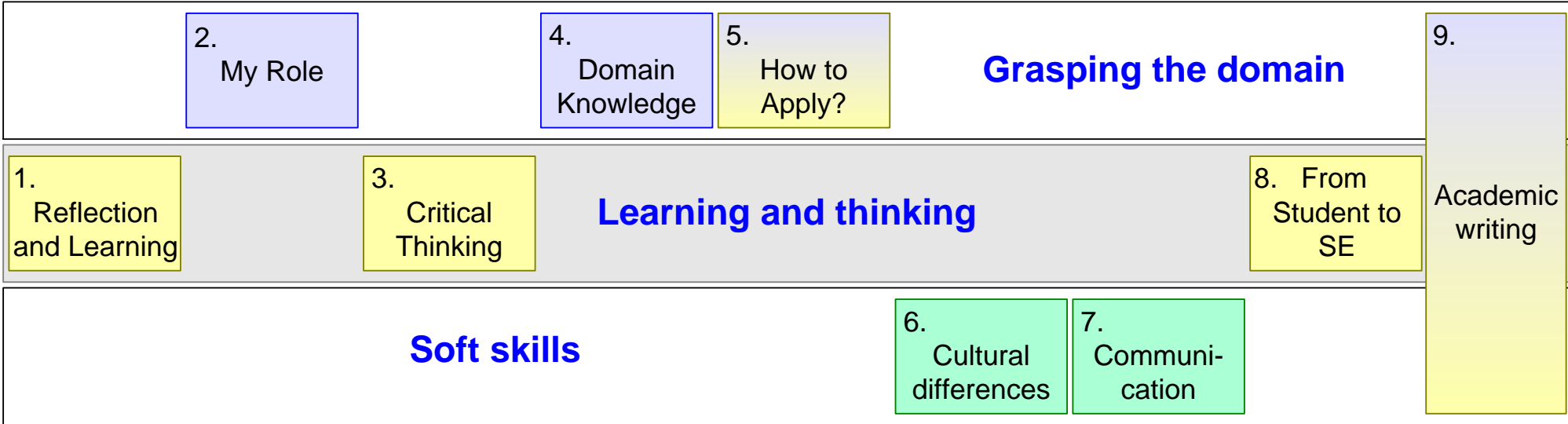


Course Format and Pedagogic

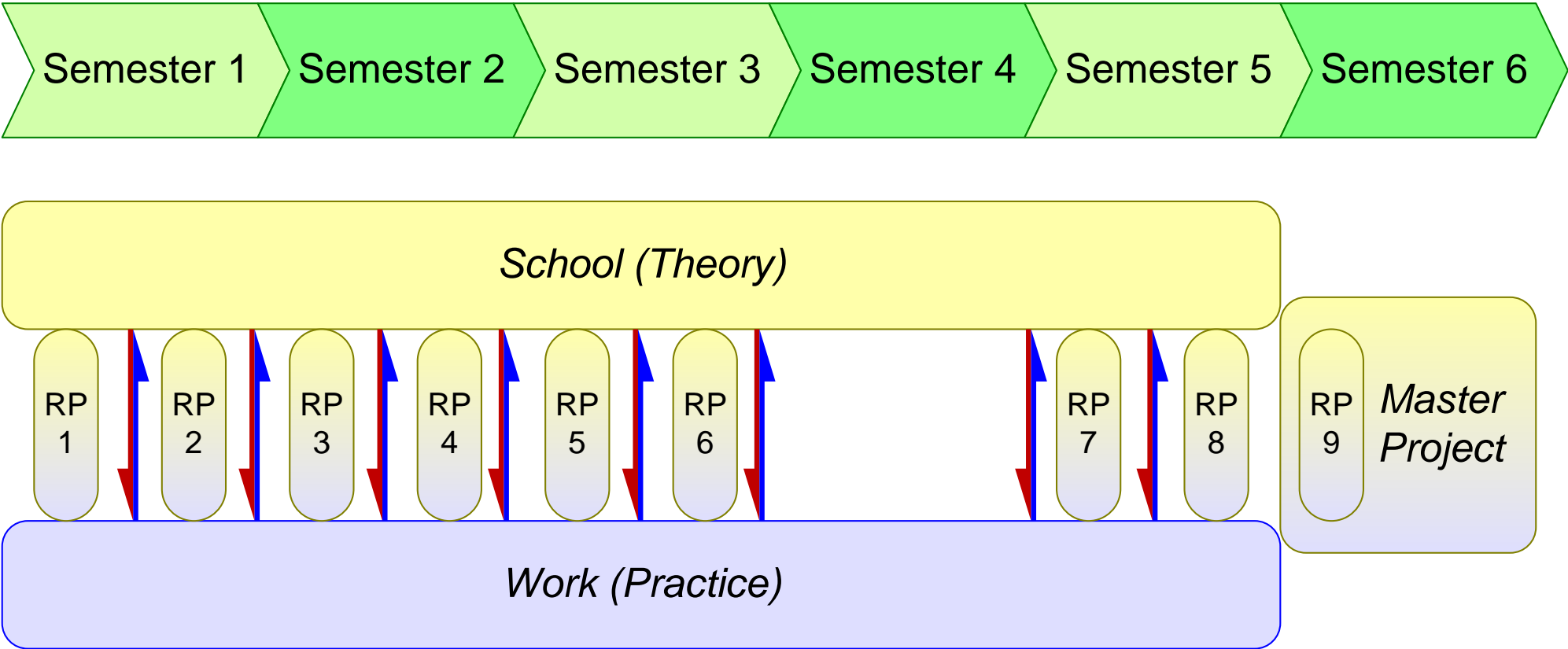


- Students travel 4 times per year
- Study and work planning is flexible
- Active learning, case-based
- Actual industry cases are possible (depends on course)

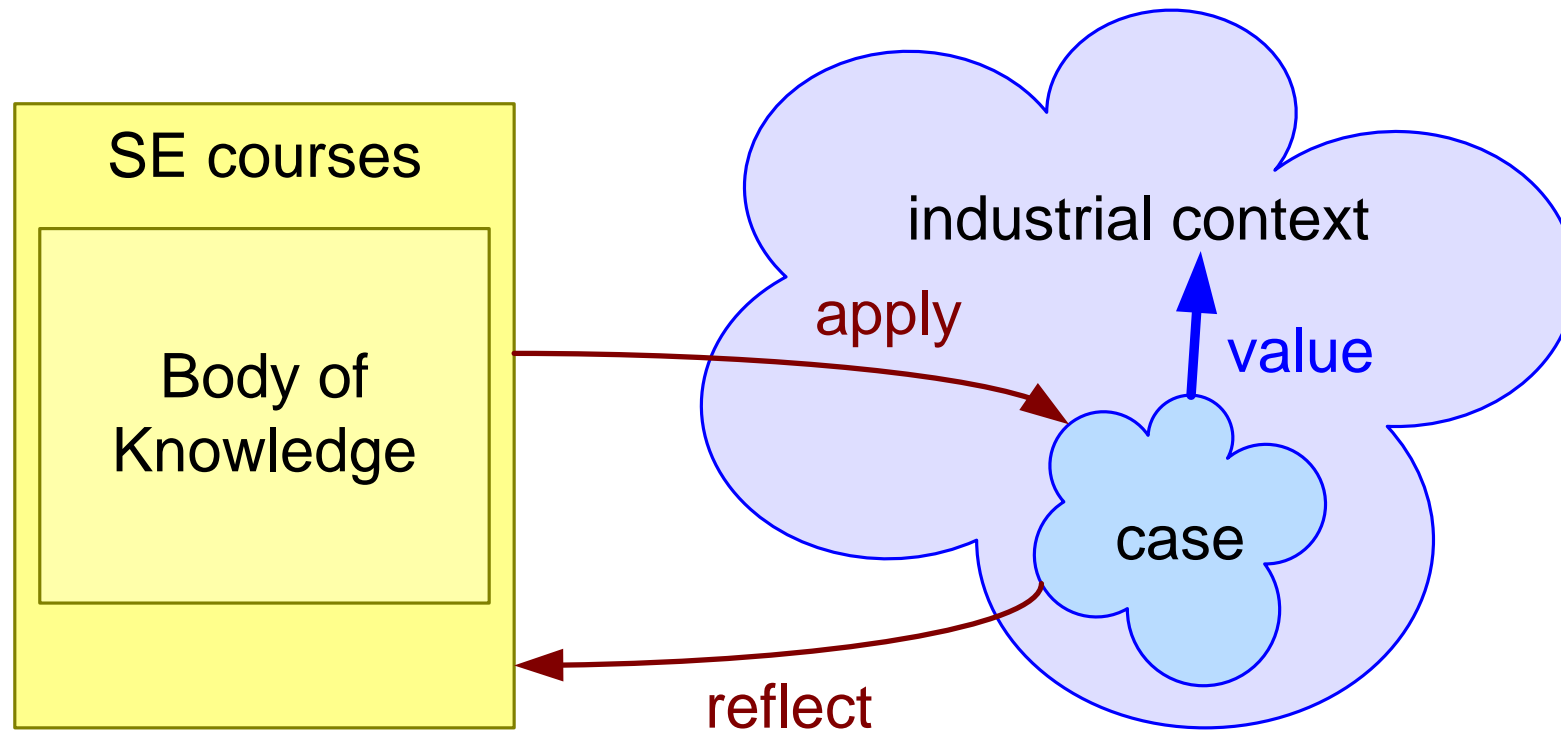
Reflective Practice; 9 Workshops in 3 Years



Reflective Practice Connects Study and Work

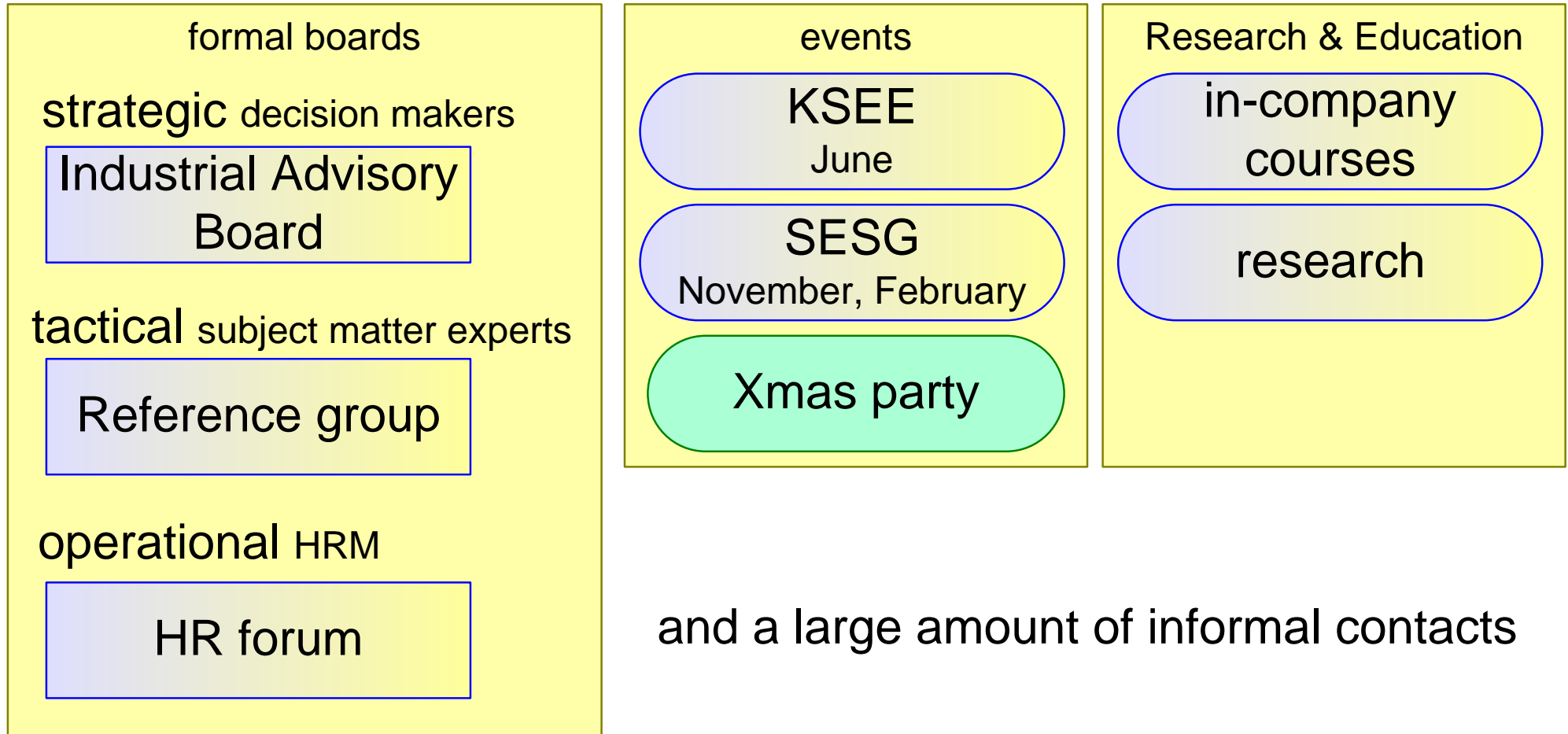


Objectives of Master Project



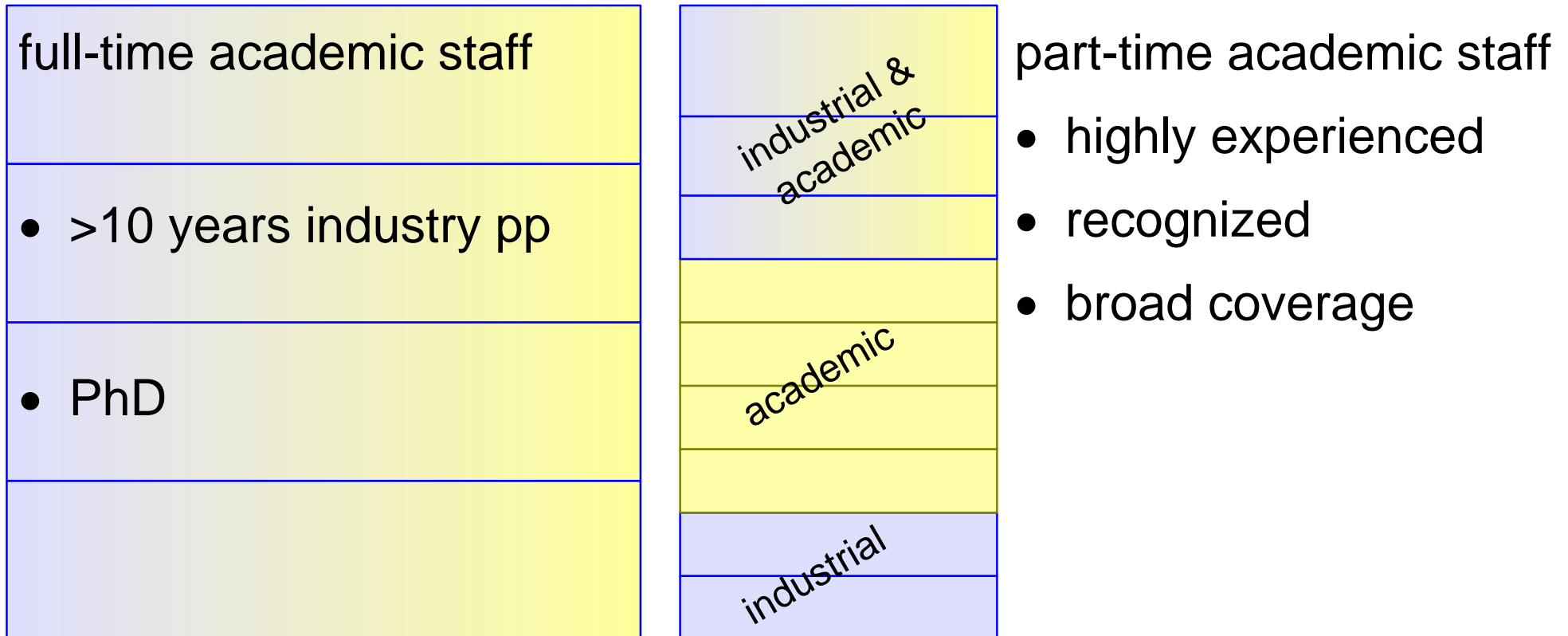
Apply part of the SE body of knowledge in practice and **evaluate** and **reflect** on its application, while **providing value** to the industrial sponsor

Industrial Networking

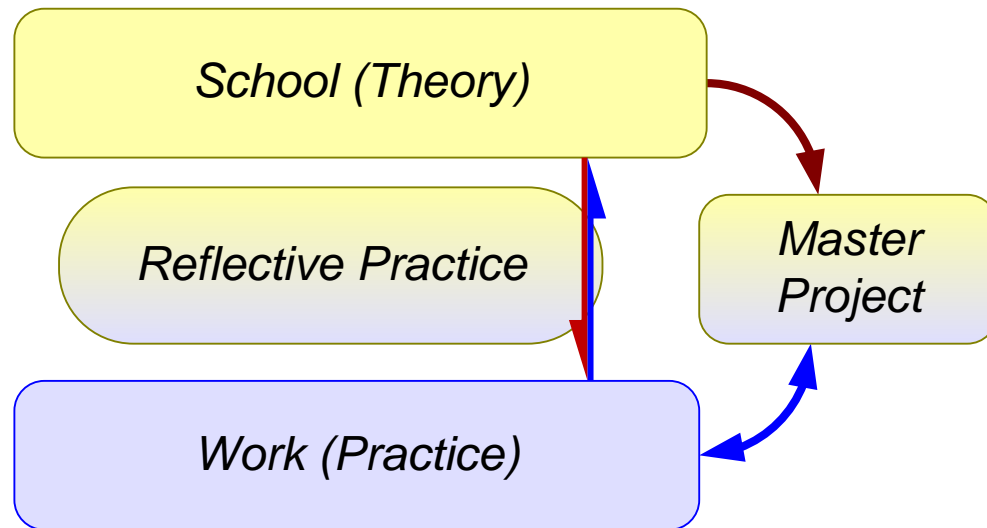


and a large amount of informal contacts

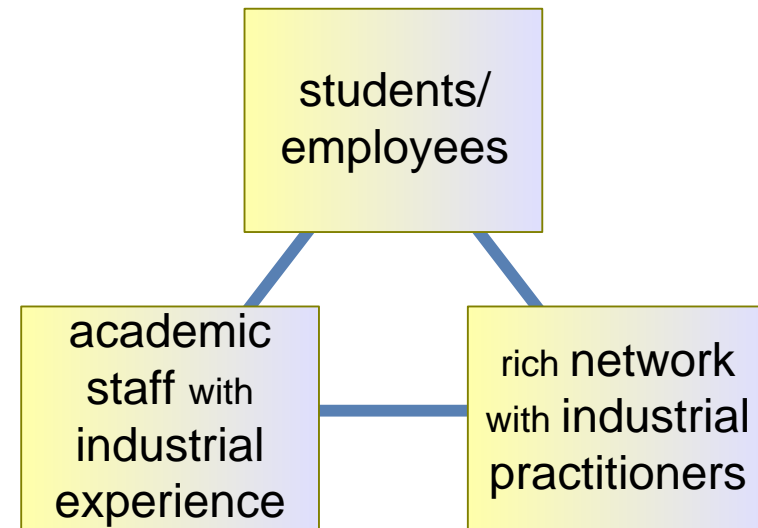
Challenge: Recruiting Industrial and Academic Staff



Summary



Studying and working concurrently
Format and pedagogic of courses fits industry
Reflective Practice connects study and work
The master project is the closure



Continuous investment in industrial relations
Offering an inspiring environment and network
for practitioners, students, and staff