

# **Tuning INDIA**

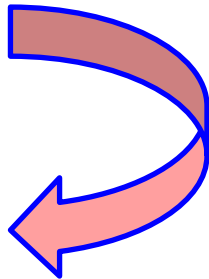
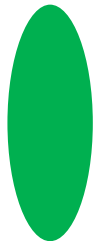
## **Second General Meeting**

**From consulting to profiling:  
some examples of Meta-Profiles**

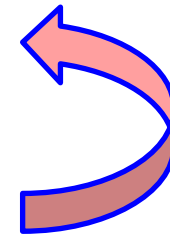
**Pablo Beneitone**

Bilbao, 20<sup>th</sup> November 2018

# Key elements



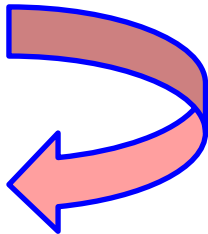
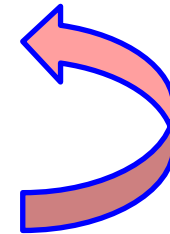
**Profile**



**GC**

**SSC**

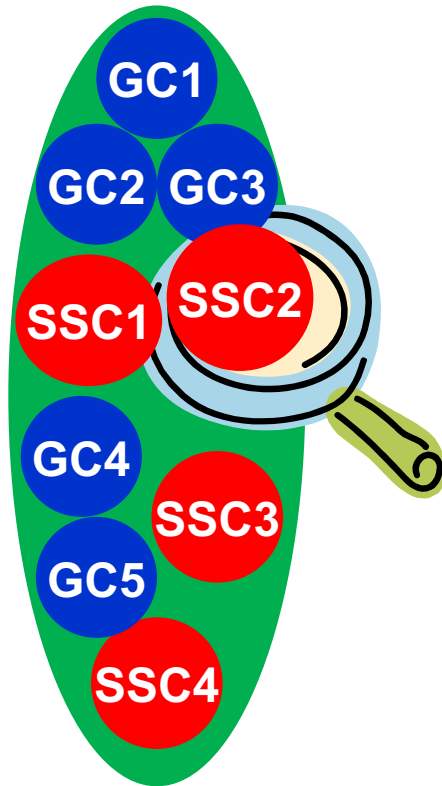
**Competences**



**Programme**

Year	Semester	Courses/Modules	Credits
1	1st Semester	Agricultural Chemistry and Soil Science	5
		General Introduction Principles and Mathematics	5
	2nd Semester	Agriculture and Environmental Crop Production	5
		Applied Economics, Marketing and Systems	5
		Plant Physiology and Pathology	5
		Plant Nutrition and Agricultural Biotechnology	5
2	1st Semester	Plant Physiology and Pathology	5
		Plant Nutrition and Agricultural Biotechnology	5
	2nd Semester	Plant Physiology and Pathology	5
		Plant Nutrition and Agricultural Biotechnology	5
		Plant Physiology and Pathology	5
		Plant Nutrition and Agricultural Biotechnology	5
3	1st Semester	Plant Physiology and Pathology	5
		Plant Nutrition and Agricultural Biotechnology	5
	2nd Semester	Plant Physiology and Pathology	5
		Plant Nutrition and Agricultural Biotechnology	5
		Plant Physiology and Pathology	5
		Plant Nutrition and Agricultural Biotechnology	5

## Concepts. Definitions



Describes in terms of **competences** and **learning outcomes** what graduates will know, understand and be able to do by the time they have successfully completed the programme.

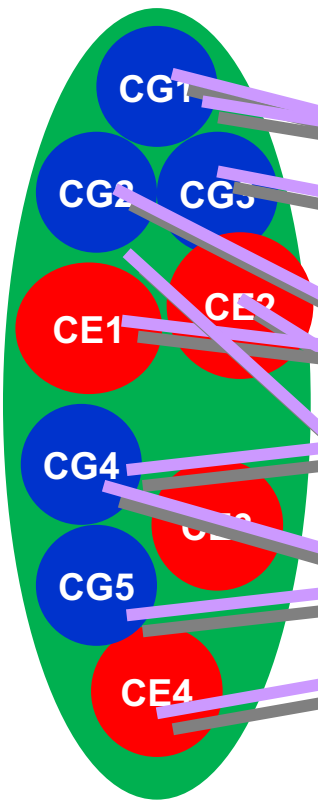
Profile

## Competence

What is a **competence** according to Tuning?

- Is a broad concept
- Represents a **dynamic combination** of:
  - **Knowledge** and understanding at different levels
  - **Skills** and abilities
  - **Attitudes** and values
- Competences are used to define degree profiles
- Competences are formed in various course units and assessed at different stages.
- Some competences are **subject area related** (specific to a field of study) while others are **generic** (common to any degree programme)

## Programme



## Profile

Year	Semester	Course/Module	Credits
1	1st Semester	Agricultural Chemistry and Soil Science	6
		Animal Production: Principles and Techniques	6
		Agronomy and Horticultural Crop Production	6
		Applied Economics, Extension and Systems	6
	2nd Semester	Microbiology and Genetics I	6
		Agrometeorology and Climate Change	6
		Plant Science and Technology	6
	3rd Semester	Agricultural Engineering and Applications	6
		Statistical Methods for Agricultural Sciences	5
		Environmental Chemistry and Biotechnology	6
4th Semester	Pests, Diseases and Weeds Control	6	
	Animal Production and Science I	6	
	Botany and Crop Physiology	4	
3	5th Semester	Scientific Communication Skills	8
		Microbiology and Genetics II	6
	Animal Science and Production II	6	
	Crop Production Technologies	6	
	Postharvest Management and Agricultural Produce Processing	6	
	Project I	8	
6th Semester	Agricultural Management and Marketing	6	
	Entrepreneurship for Small and Medium Agribusiness	4	
	Project II	8	
		Practical Training	10

**Subject Area X**

**Degree profile  
University A**

**Degree profile  
University I**

**Degree profile  
University B**

**Degree profile  
University H**

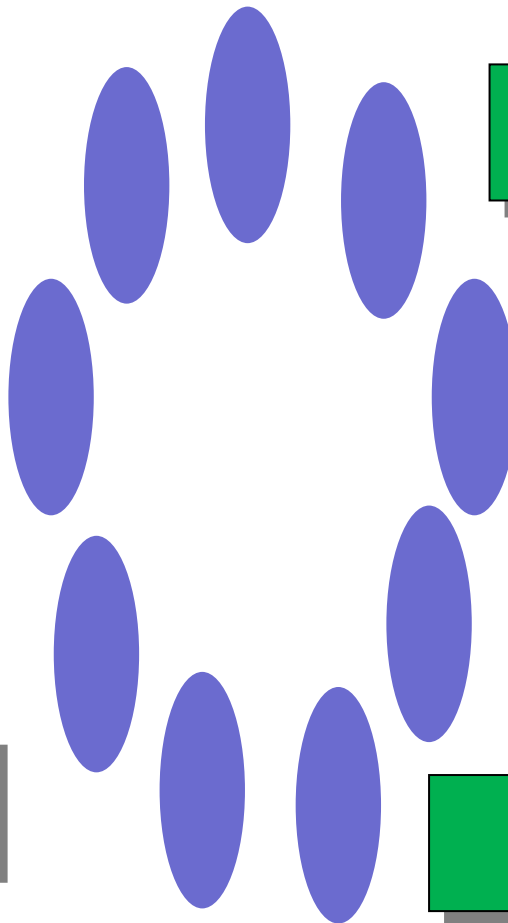
**Degree profile  
University C**

**Degree profile  
University G**

**Degree profile  
University D**

**Degree profile  
University E**

**Degree profile  
University F**



**List of Generic Competences**

**GC1**

**GC2**

**GC3**

**GC4**

**GC5**

**GC6**

**List of Subject Specific Competences**

**SSC1**

**SSC6**

**SSC2**

**SSC7**

**SSC3**

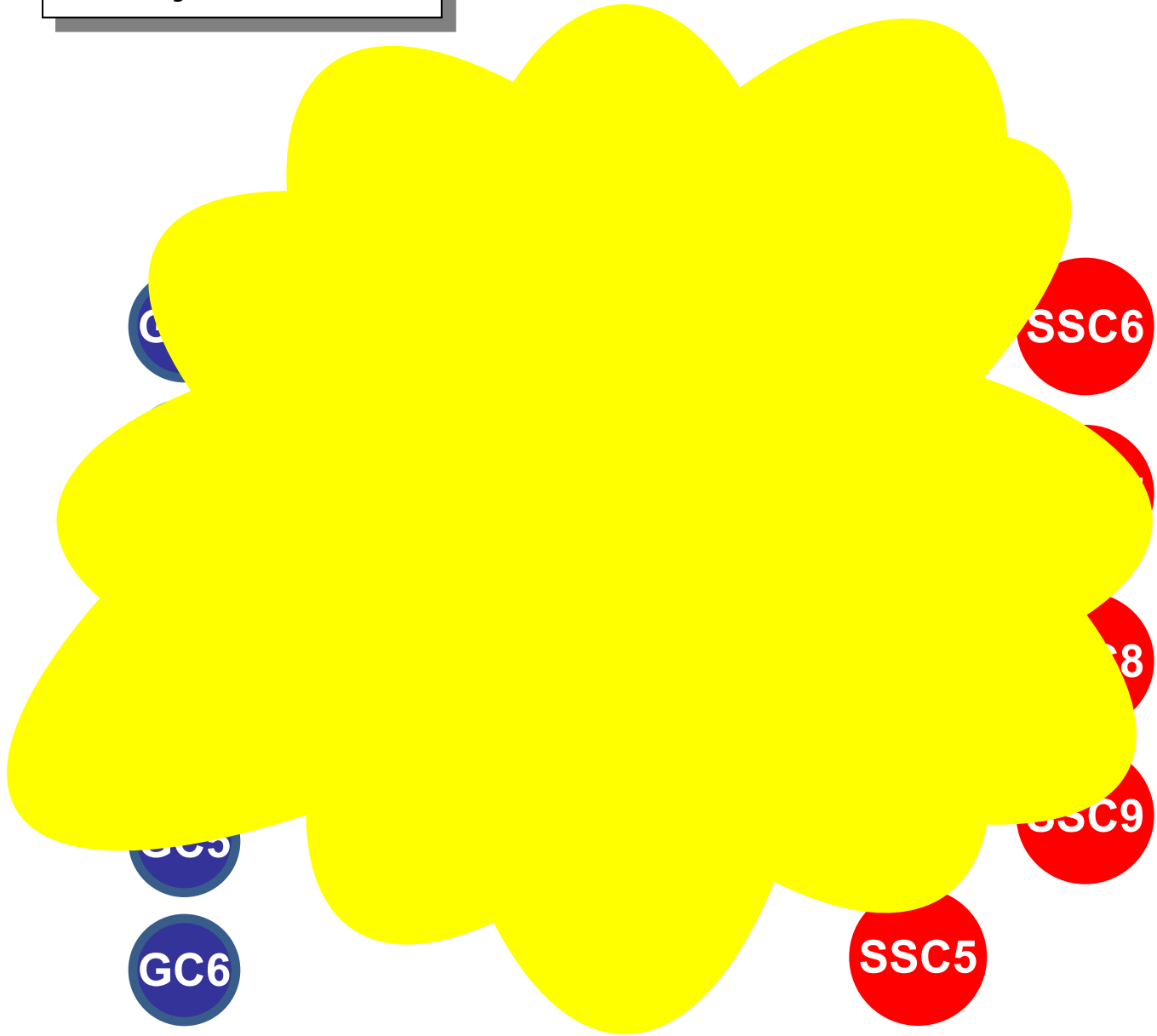
**SSC8**

**SSC4**

**SSC9**

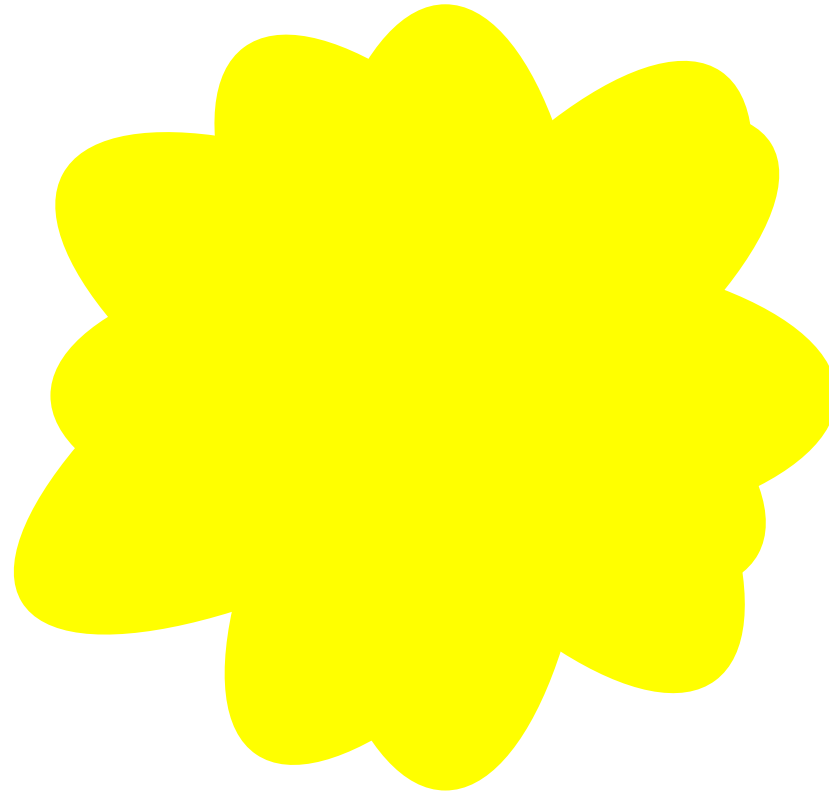
**SSC5**

# Subject Area X





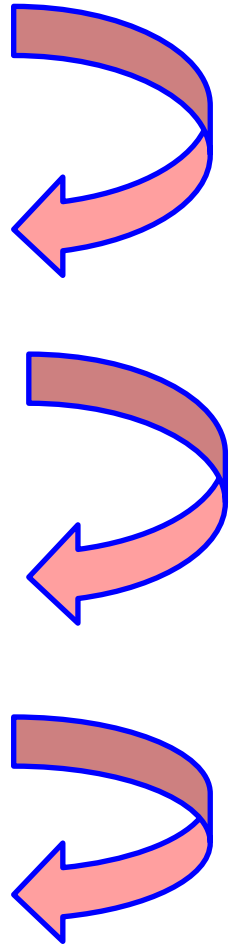
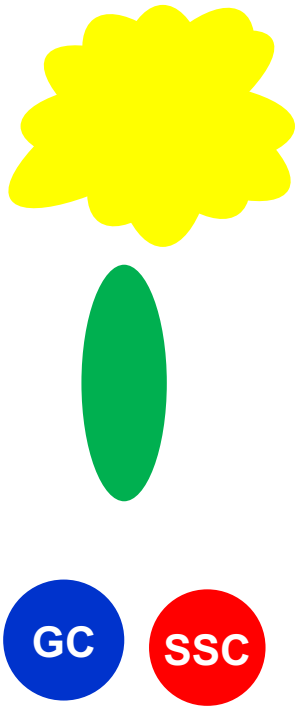
## Meta profile



**A Meta – profile** is a group’s representation of the structure and combination of competences which gives identity to a thematic area.

**The meta-profiles** are referential elements and they are always mental constructions, destined to reflect and analyse the possible and diverse real degree profiles

# Key elements

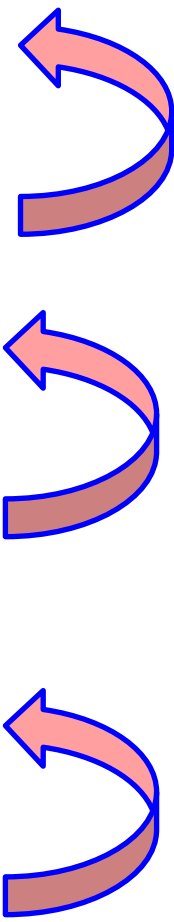


**Meta profile**

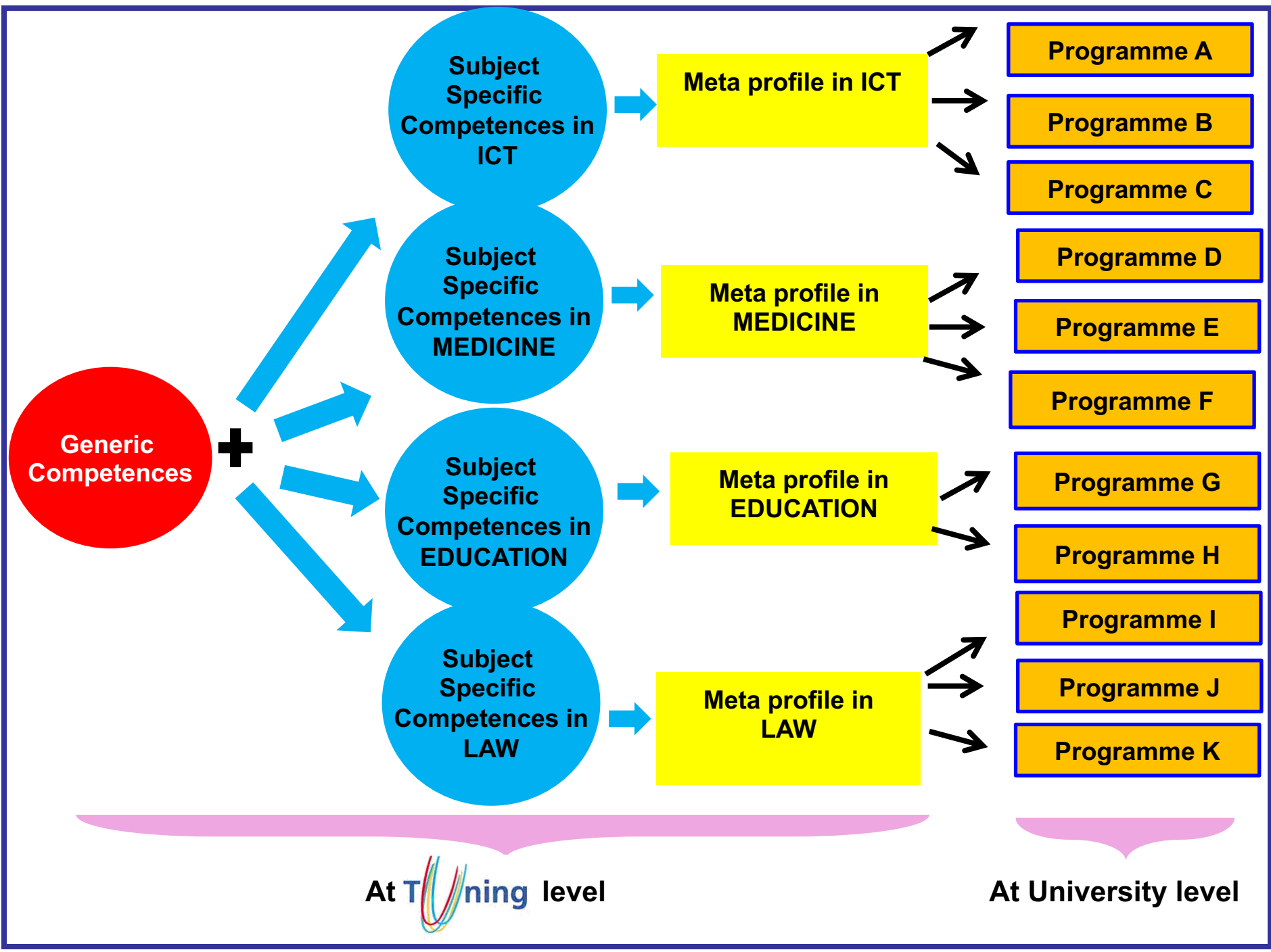
**Profile**

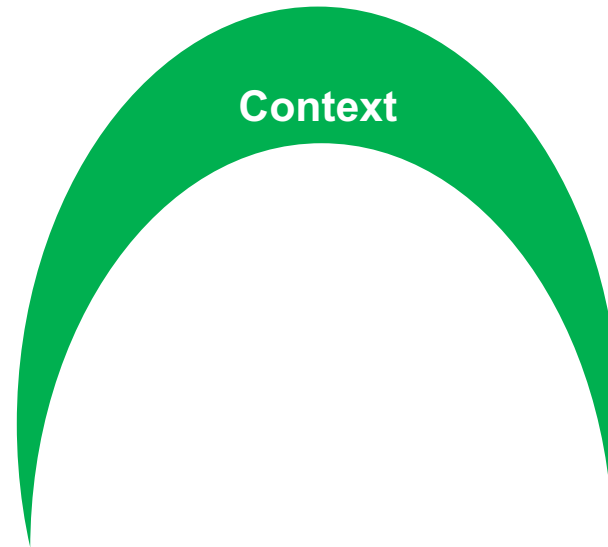
**Competences**

**Programme**



Year	Semester	Course/Module	Credits
1	1st Semester	Agricultural Chemistry and Soil Science	6
		Animal Production: Principles and Techniques	6
		Genetics and Molecular Biology	6
	2nd Semester	Animal Husbandry and Welfare	6
		Food Safety and Food Quality	6
		Food Microbiology and Food Preservation	6
2	3rd Semester	Food Safety and Food Quality	6
		Food Microbiology and Food Preservation	6
		Food Safety and Food Quality	6
	4th Semester	Food Safety and Food Quality	6
		Food Safety and Food Quality	6
		Food Safety and Food Quality	6
3	5th Semester	Food Safety and Food Quality	6
		Food Safety and Food Quality	6
		Food Safety and Food Quality	6
	6th Semester	Food Safety and Food Quality	6
		Food Safety and Food Quality	6
		Food Safety and Food Quality	6





The **Degree Profile** takes into consideration the professional and social needs at the local- regional or national level for which it is built



**Each University has a set of  
strengths on which to build**

**Each university has a mission to  
fulfill**

**Profiles bear the mark of the  
University where they originated**



**Meta-profile**

The Profile gains capacity for  
being recognized through the  
**Meta-Profile**

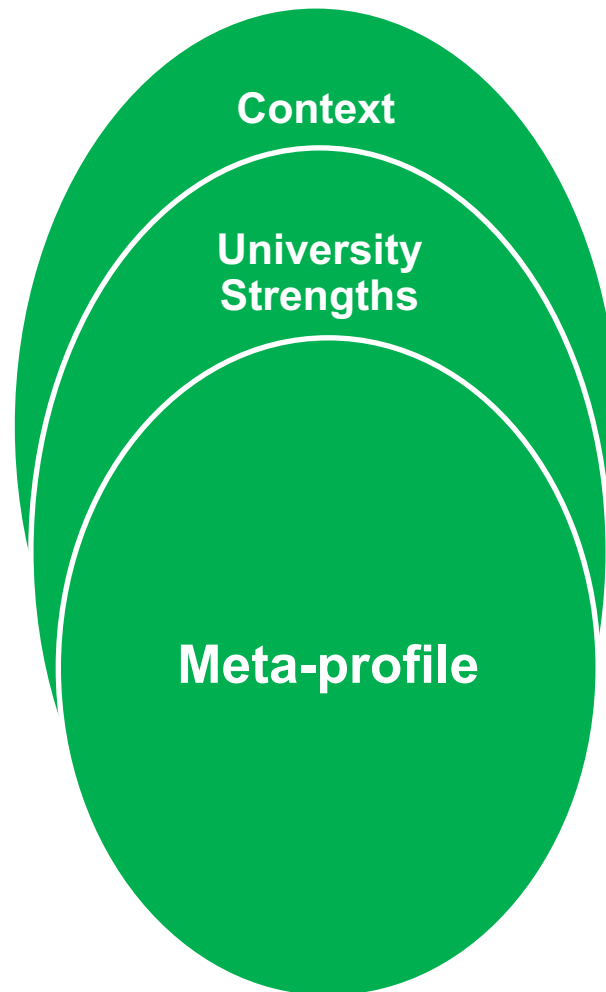


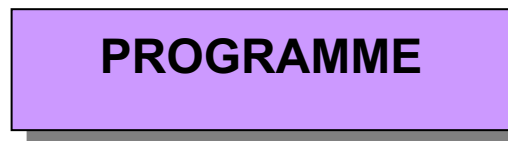
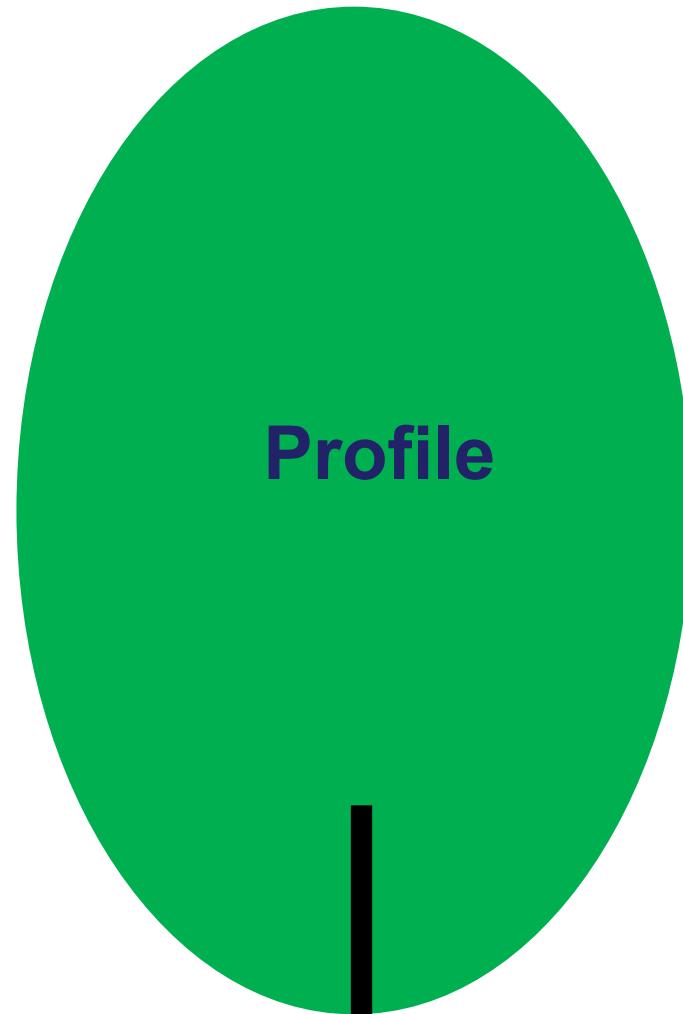
**Context**

**Context**

**University  
Strengths**



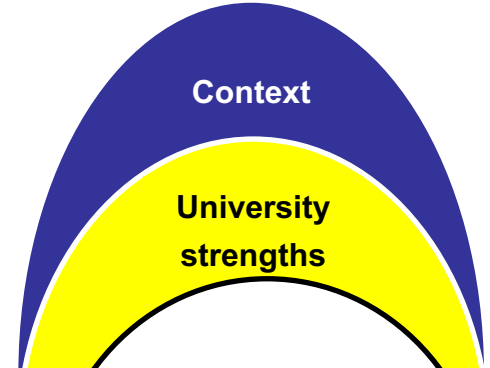
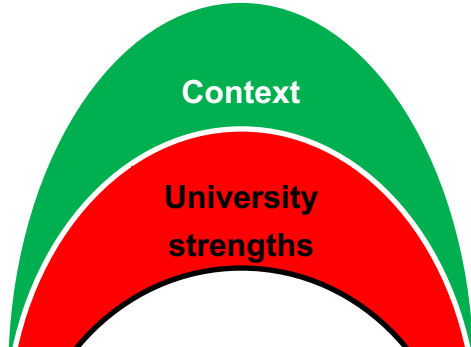
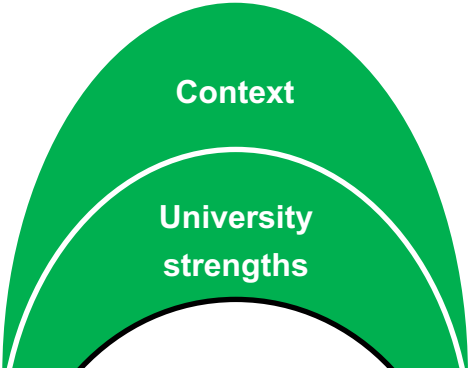




**Profile A**

**Profile B**

**Profile C**



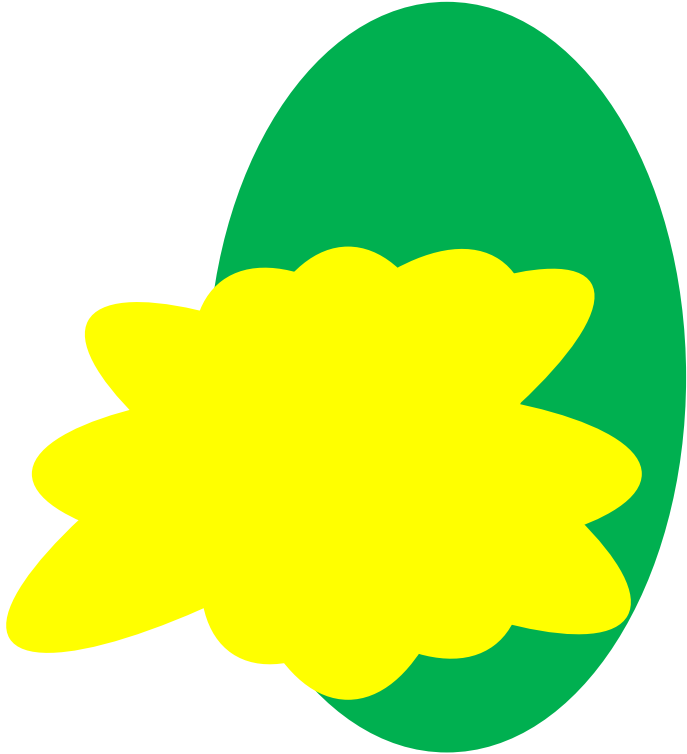
**RECOGNITION**

**Programme A**

**Programme B**

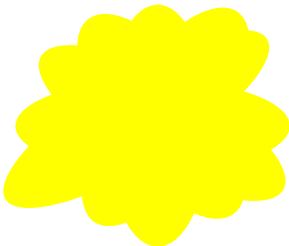
**Programme C**

**Bridging meta-profile with reality**

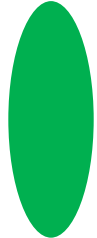


**Profile  
University A**

**Profile  
University B**



**Meta profile**



**Profile**

Year	Semester	Course/Module	Credits
1	1st Semester	General University and Soft Skills	6
		1st Semester: Principles and Techniques	6
		1st Semester: Laboratory and Project Work	6
	2nd Semester	2nd Semester: Equipment and Systems	6
		2nd Semester: Design and Development	6
		2nd Semester: Project Work	6
2	3rd Semester	3rd Semester: Design and Development	6
		3rd Semester: Project Work	6
		3rd Semester: Laboratory and Project Work	6
	4th Semester	4th Semester: Design and Development	6
		4th Semester: Project Work	6
		4th Semester: Laboratory and Project Work	6
3	5th Semester	5th Semester: Design and Development	6
		5th Semester: Project Work	6
		5th Semester: Laboratory and Project Work	6
	6th Semester	6th Semester: Design and Development	6
		6th Semester: Project Work	6
		6th Semester: Laboratory and Project Work	6

**Programme**

**Institutional level**



**KC**

**Key Competences**

**LEARNING OUTCOMES**

## Some examples of META-PROFILES

## List of 18 Generic Competences

GC1

GC2

GC3

GC4

GC5

GC6

## List of 54 Subject Specific Competences

SSC1

SSC6

SSC2

SSC7

SSC3

SSC8

SSC4

SSC9

SSC5

# Original Subject Specific Competences for Civil Engineering in Africa (54 competences)



1. Ability to identify the need for construction of any type and structure (new, old)
2. Ability to identify different options (e.g. the need to demolish, reconstruct, maintain, rehabilitate, renovate and to plan those activities)
3. Skills in cost, quality and time optimization
4. Skills in Environmental and Social Impact Assessment
5. Skills in cost, quality and time optimization
6. Knowledge about the context and challenges of environment and development
7. Ability to transmit project requirements into sketches and explain it to clients
8. Ability to analyse, reconfigure and apply relevant drawings, data and technologies
9. Ability to coordinate, supervise and control
10. Capacity to model and simulate systems, structures, projects and processes
11. Ability to effective and professional interaction with other professions and to come to integrate solutions
12. Ability to design
13. Knowledge of plant and equipment
14. Capacity to test the quality of building materials
15. Skills in research on appropriate technologies
16. Skills in developing new construction technologies and materials
17. Skills of testing materials and technologies
18. Skills in cost, quality and time optimization
19. Ability to calculate design parameters (Mathematical skills)
20. Ability to analyse (mathematical and abstract background as basis for decision making)
21. Ability to program (to plan the process and allocate resources)
22. Knowledge about national and international construction standards
23. Ability to identify appropriate legal frameworks
24. Skills in handling data / information (survey data, soil information, materials data, environmental data, social data ...)
25. Knowledge of maintenance of infrastructure
26. Ability to calculate and quantify
27. Ability to effective and professional interaction with other professions and to come to integrate solutions

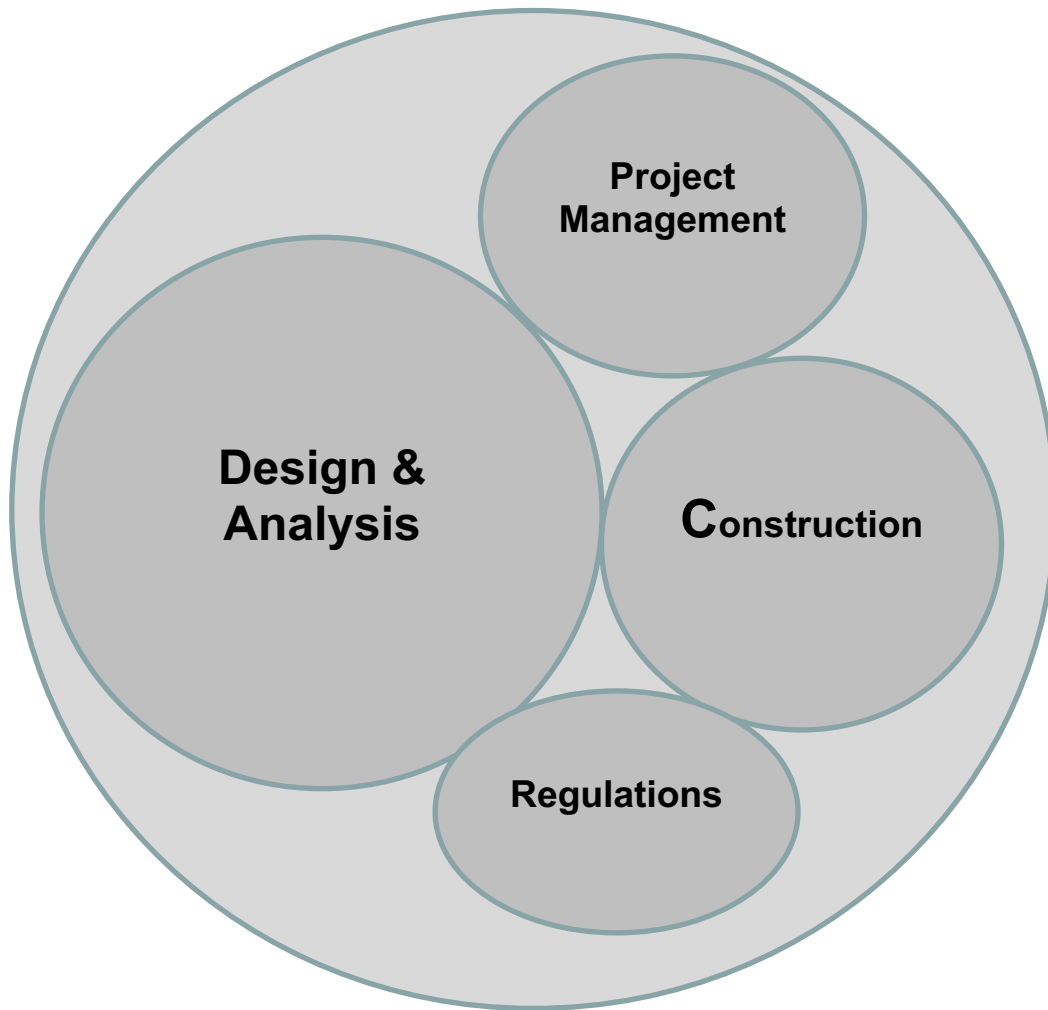


# Original Subject Specific Competences for Civil Engineering in Africa (54 competences)



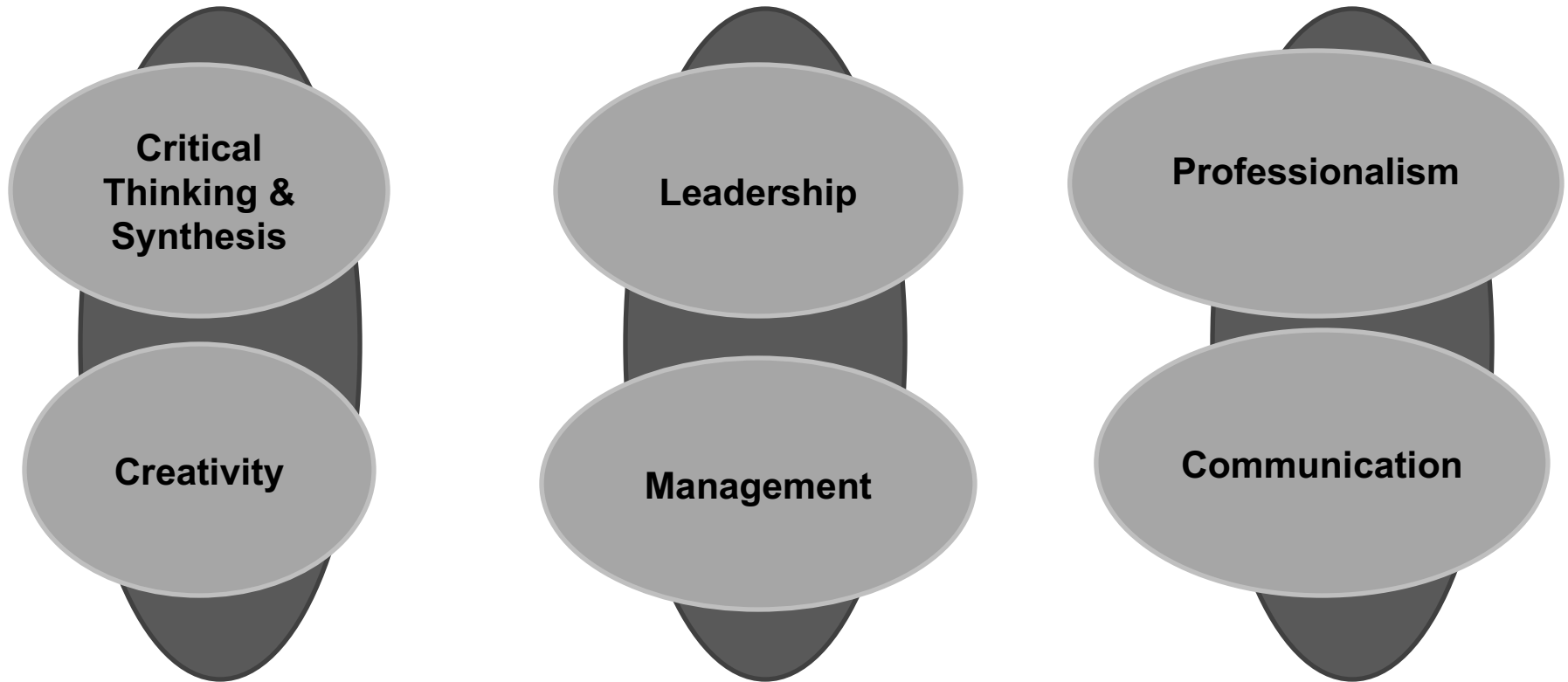
28. Understanding contractual and financial management aspects as well as of insurance and guarantees aspects (procurement)
29. Ability to program (to plan the process and allocate resources)
30. Skills in cost, quality and time optimization
31. Ability of translating, interpreting of data and/or drawings into actual construction
32. Knowledge of plant and equipment
33. Ability of translating, interpreting of data and/or drawings into actual construction
34. Ability to effective and professional interaction with other professions and to come to integrate solutions
35. Knowledge on basic Construction management principles (Work Breakdown, Time, Risk, Quality, Resource, Financial and HR Management, Monitoring)
36. Ability to coordinate, supervise and control
37. Knowledge of plant and equipment
38. Commitment to health and safety
39. Knowledge of maintenance of infrastructure
40. Ability to reconstruct, maintain, rehabilitate, renovate Ability/skills to supervise construction
41. Ability to program (to plan the process and allocate resources)
42. Capacity to test the quality of building materials
43. Skills in developing new construction technologies and materials
44. Ability to supervise/manage
45. Ability to control construction
46. Quality management/ Skills in quality control techniques
47. Skills in cost, quality and time optimization
48. Capacity to introduce health and safety measures in construction and materials
49. Skills in handling data / information (survey data, soil information, materials data, environmental data, social data ...)
50. Skills to deal with dispute resolutions
51. Skills to finalize financial implications and legal responsibilities
52. Skills to deal with dispute resolutions
53. Skills to address defects and quality issues
54. Skills in commissioning

**After consultation process, the following core clusters were identified in Africa for Civil Engineering:**



**The group was in consensus that these four core clusters are identified as central in most Civil Engineering curricula of the Universities taking part in the Tuning project.**

# Clusters of Generic Competences (also linked with Subject Specific Competences)



# Clustering ....

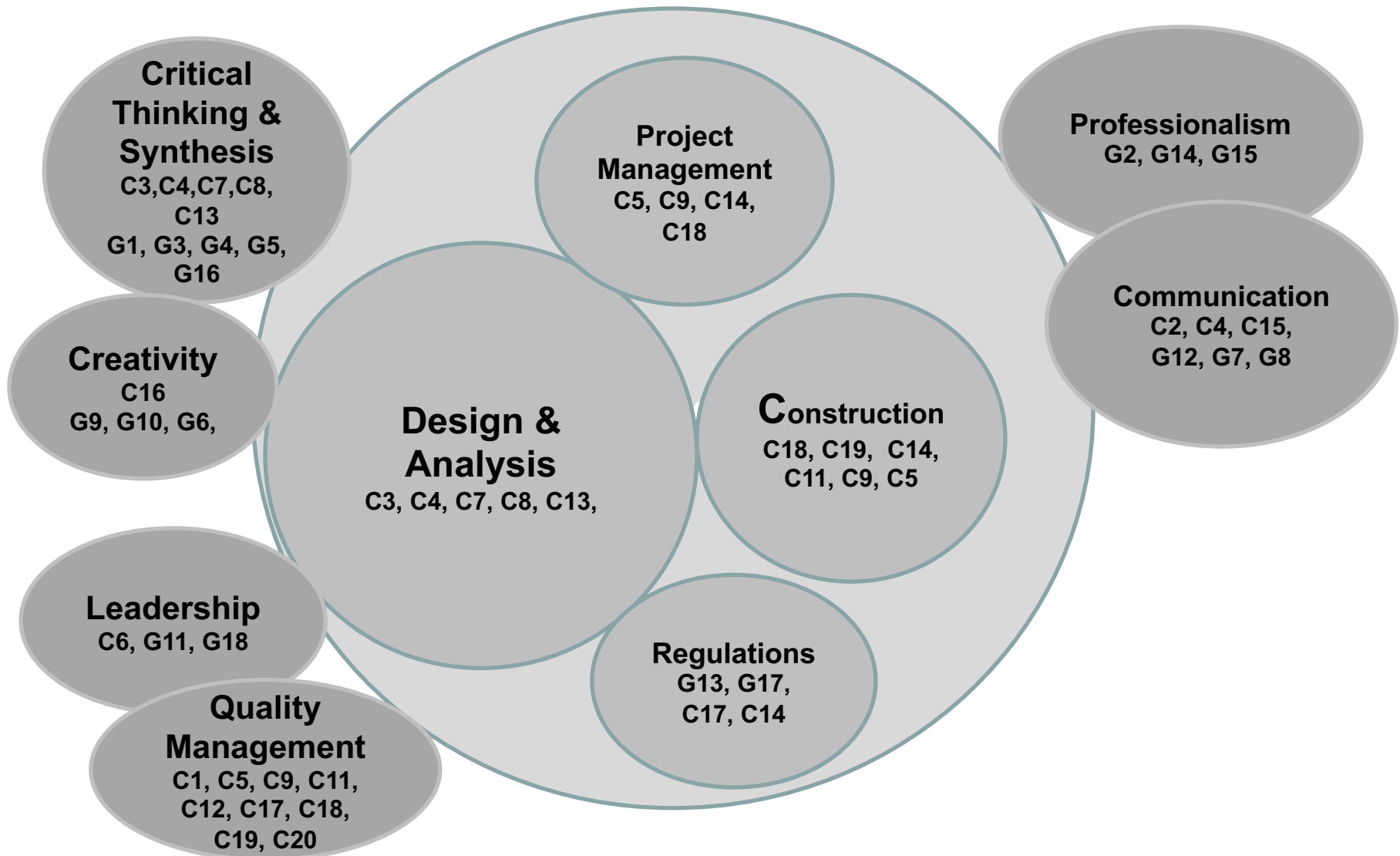


	Subject Specific Competence	Cluster
1.	Ability to coordinate, manage, supervise and control construction	Management
2.	Ability to translate and interpret for data and/or drawings into actual construction	Communication
3.	Ability to design, quantify and calculate parameters and capacity to model and simulate systems, structures, projects and processes	Design & Analysis
4.	Ability to analyze, reconfigure and apply relevant drawings, data and technology and ability to transmit project requirements into sketches and explaining it to clients	Design & Communication
5.	Knowledge to reconstruct, maintain, rehabilitate, renovate and knowledge of maintenance of infrastructure	Management
6.	Skills in cost, quality and time optimization and quality control techniques	Leadership
7.	Skills in handling data or information (survey data, soil information...)	Analysis
8.	Ability to identify the need for construction of any type and structure and ability to identify different options	Analysis
9.	Knowledge of basic construction management principles and to program	Management
10.	Commitment to health and safety and capacity to introduce safety measures in construction and materials	Regulations
11.	Capacity to test the quality of materials	Quality Management
12.	Quality management and skills to address defects and quality issues	Quality Management
13.	Ability to analyze (mathematical abstract background as basis for decision making)	Analysis
14.	Knowledge about national and international construction standards	Regulations
15.	Ability to develop effective and professional interaction with other professions and to come to integrate solutions	Communication
16.	Skills in developing new, appropriate and sustainable construction technologies and materials	Creativity
17.	Skills to finalize financial implications and identify legal responsibilities and frameworks	Management & Regulations
18.	Knowledge of plant and equipment	Management
19.	Basic understanding of contractual and financial management as well as of insurance and guarantee aspects	Management
20.	Skills in environmental and social impact assessment, knowledge about the context and the challenges of development	Regulations & Sustainability

After this reflection process the group agreed 20 Subject Specific Competences for Civil Engineering in Africa organized by clusters

They integrated 18 Generic Competences and they elaborated a Meta-profile for Civil Engineering in Africa

# An example of Metaprofile: Civil Engineering in Africa



## List of 18 Generic Competences

GC1

GC2

GC3

GC4

GC5

GC6

## List of 19 Subject Specific Competences

SSC1

SSC6

SSC2

SSC7

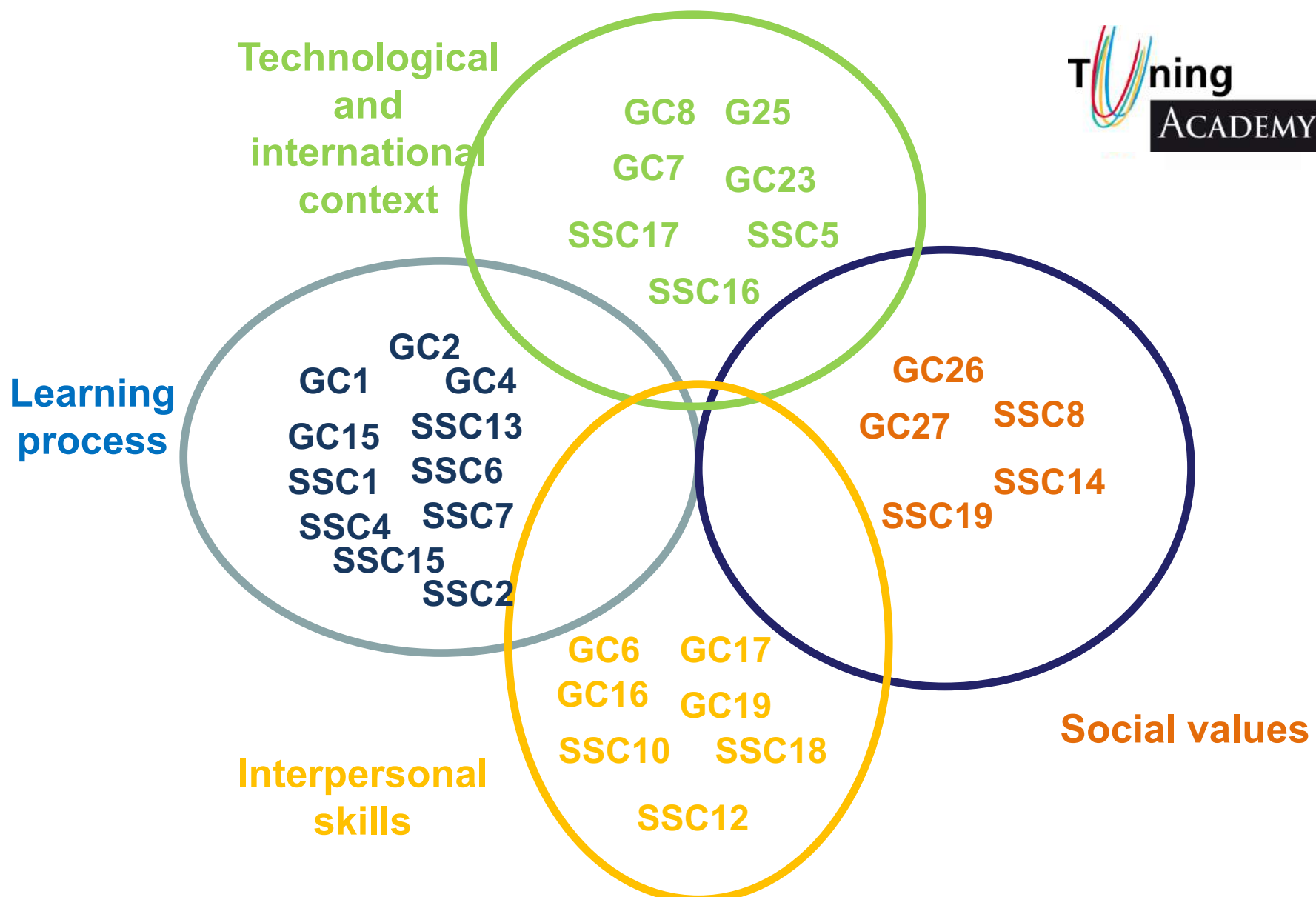
SSC3

SSC8

SSC4

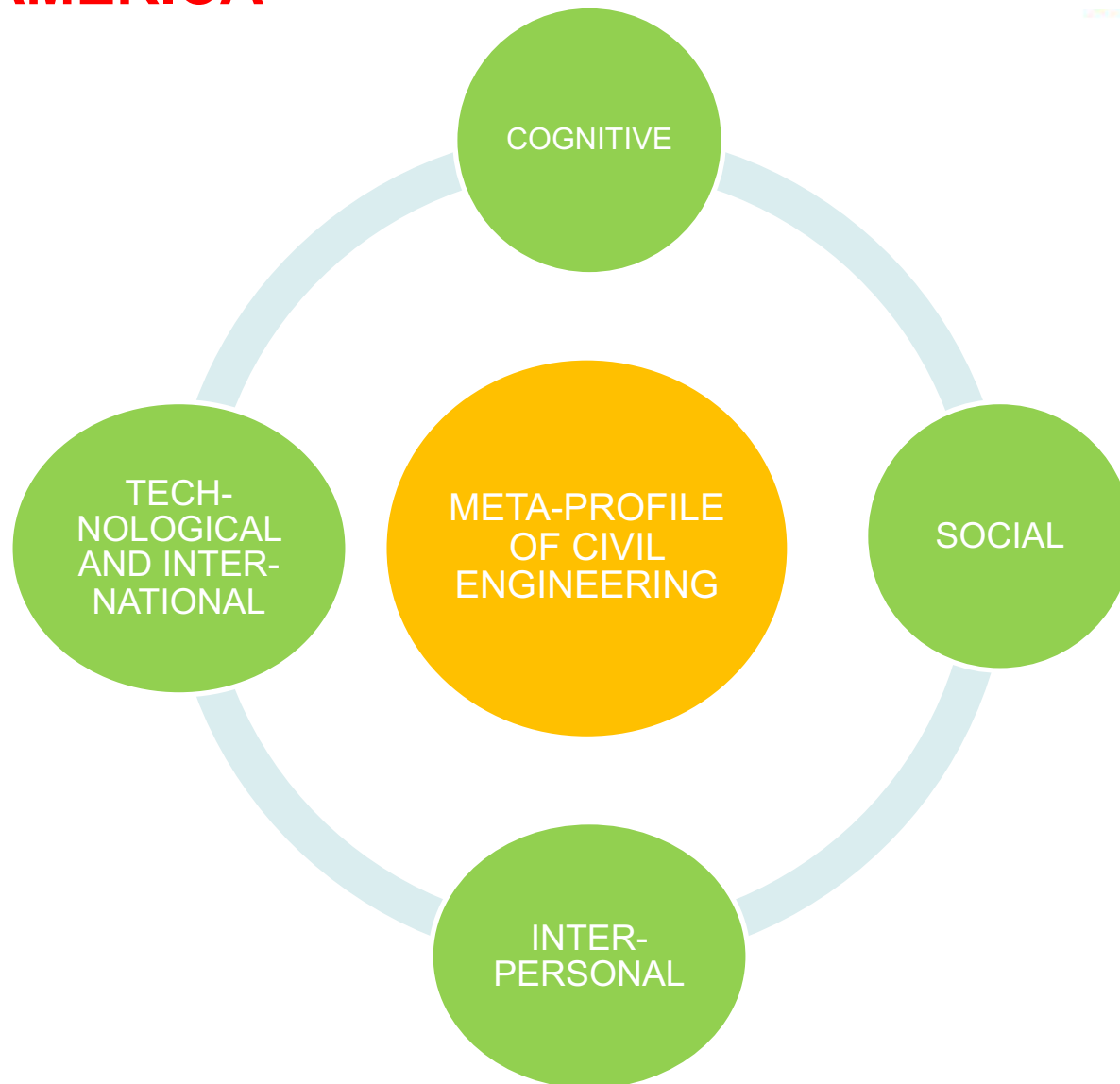
SSC9

SSC5



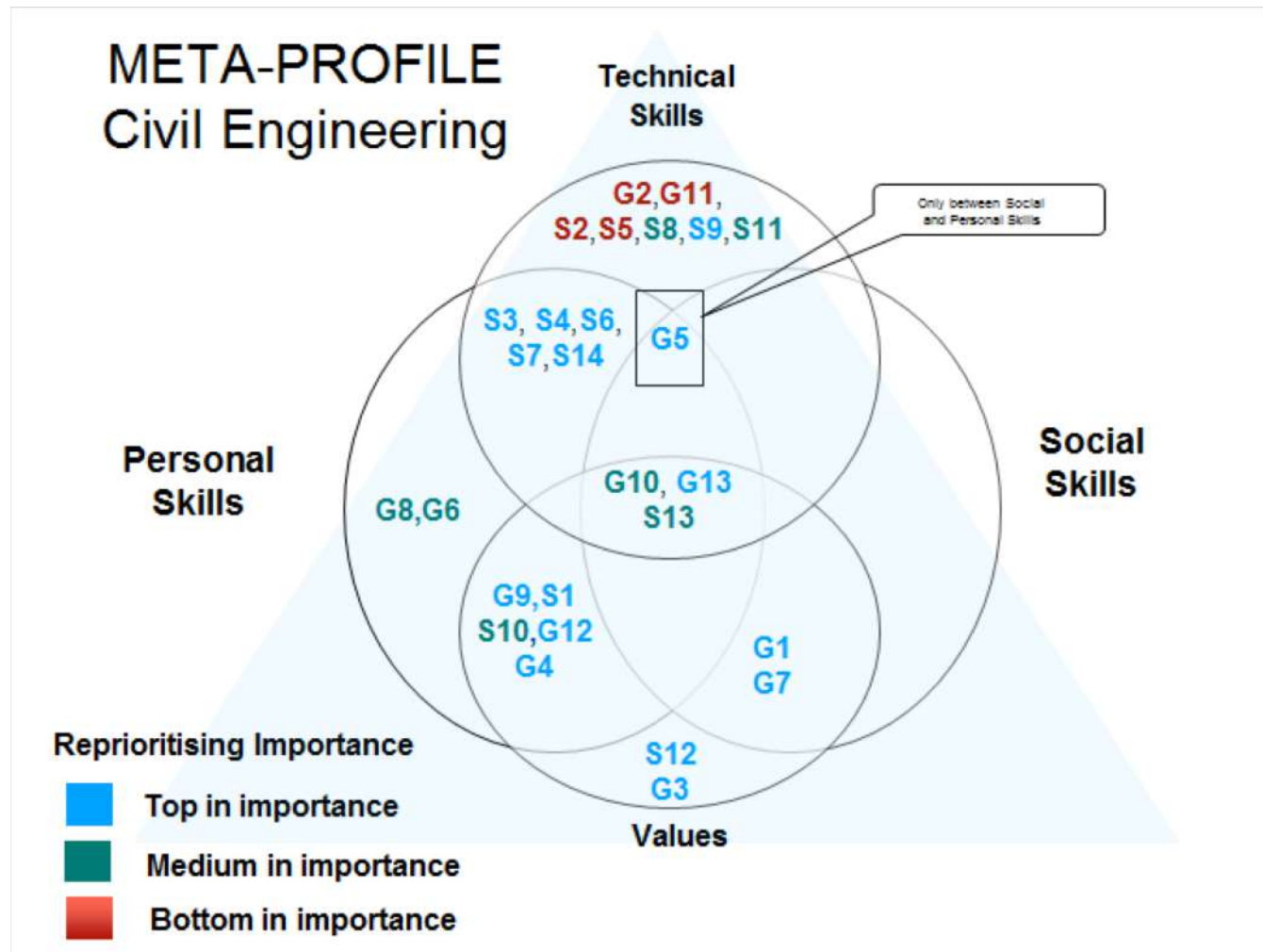
**After consultation process, and through a factorial analysis, the group identified 4 factors/dimensions for Civil Engineering in Latin America**

# Meta-profile for Civil Engineering in LATIN AMERICA

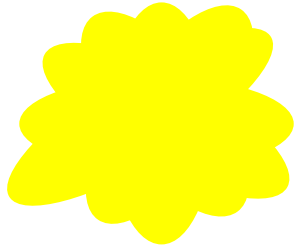




# Meta-profile for Civil Engineering in SOUTH EAST ASIA



## Tasks to be done (during the meeting)



### Meta profile

1. Elaborate the meta profile

**Muchas gracias!!!**