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1. General observations

The introduction of the approach by attributes in the curricula is innovative for the training in Engineering.

The definition of attribute developed by the Washington Accord is: "(...) set of evaluable individual results, which are indicative components of the graduate's potential to acquire competence for professional practice". All the established attributes are defined in terms of capacities, which the graduate should be able to demonstrate as a product of the training process. These capacities are developed gradually, in such a way that it is possible to identify at least three levels of progress: initial, intermediate and advanced.

At the initial level, the person in training is able to remember and understand the knowledge, skills and attitudes that denote a given attribute. At the intermediate level, the person in training is able to apply and analyze the knowledge, skills and attitudes involved in an attribute. At the advanced level, the person in training is able to evaluate and synthesize knowledge, skills and attitudes of an attribute.

From the definition you can understand that the incorporation of the approach by attributes will be complete at the moment in which the program presents evidence that its graduates hold, to a relevant degree, the capacities indicated in each of the twelve established attributes.

The criterion indicated by the agency comprises four aspects: the **effectiveness** and **relevance** of the **policies and actions** carried out by the program to advance in the incorporation of the approach by attributes. (The definitions of effectiveness

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and relevance can be found in the glossary of terms and concepts).

By policies it is understood the most general decisions that have been made regarding the organization and the commitment of the academic community, in particular of the teachers, to incorporate the approach by attributes and that ensure the sustainability of the effort to develop and measure them.

By actions it is expected that the program demonstrates a significant advance in four basic elements:

1. The **curricular mapping** of the attributes, this is the graphic indication in the curriculum of the moments of exposure to learning situations, which favor the development of the attributes and the moments in which they are evaluated, in their different levels of development: initial, intermediate or advanced (it is usually a matrix of subjects vs. attributes). It is recommended that, in the study programs of the different subjects, the attributes to which it contributes, its level and its evaluation be made explicit.

2. Development of **performance indicators**, which are means to corroborate the level of achievement of the attributes in its different components. These indicators must be properly documented.

3. Development of **evaluation tools**, which are the instruments used to assess the level of progress in the consolidation of attributes. The preparation of the tools necessarily implies the application of the procedures linked to their use. An example of these tools is the "evaluation rubrics", which are scoring guides used in evaluating

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student performance that describe the specific characteristics of a product, project or task at various levels of performance, to clarify what is expected of the student's work, to assess its execution and to facilitate the proportion of feedback that must be given.

4. **Results of the evaluation of the attributes**. The program should show the concrete achievements of a significant percentage of the students, in the consolidation of the twelve attributes, as well as the corrective actions taken, in case of not obtaining satisfactory results.

The evaluation of the progress in incorporating the approach by attributes has been assigned in the first instance to the deputy chief of the evaluation team with the close collaboration of the program specialist. The provided reports can report observations and formative comments, but it is the role of the Accreditation Council, in the decision meeting, the summative analysis.

2. Purpose of the guide: Establish the minimum elements that make possible the evaluation of the incorporation of the approach by attributes in the training process.

3. Actions prior to the visit:

 a. Study in detail the definitions of the twelve established attributes.

 b. Analyze the information provided in the self-assessment document by the program to be evaluated.

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c. Make a prior assessment of effectiveness and relevance of the policies and actions carried out by the program.

4. **Actions during the visit**

   a. Verify on site the effectiveness and relevance of the policies and actions developed. The checklist below must be used.

   b. Additional documentation provided and the inquiry with teachers and students must be verified.

   c. Participate in the deliberation meetings of the evaluation team.

5. **Actions after the visit:**

   a. Provide the team leader with a summary of the evaluation carried out for its inclusion in the visit´s report.

   b. This synthesis should provide a summary for each attribute, of the specific evidence gathered from the review of the documentation and the visit site.

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6. Check sheet for the evaluation of the progress:

Aspects	Element	Qualification scale			
		A+	A	A-	U
Policies	Organization				
	Commitment				
Actions	Curricular map				
	Indicators				
	Tools				
	Results				

A+:(Acceptable plus) The program exceeds the requirements of effectiveness and relevance. The incorporation of the attributes is a consolidated aspect.

A: (Acceptable) The program satisfies the requirements of effectiveness and pertinence. The incorporation of the attributes is satisfactory, shows a notorious progress, tends to improve, but has not yet been fully consolidated.

A-: (Acceptable minus) The program complies with the basic actions for the incorporation of the attributes, but its development is incipient.

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U: (unacceptable) The program does not comply fully with the elements for the incorporation of the attributes in its training process.

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