

# How to generate an item bank structure in Canvas (questions)

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# How to do it

The first thing you must do before building an item bank is give it a **structure**.

Finding or selecting the questions to be included in a quiz can be a fairly simple matter when working on a small number of questions. However, the more questions you have, the harder it becomes to organize your item bank. This is why you should spend as much time as you need thinking about, specifying and designing the structure for your item bank.

There is no one-size-fits-all solution when it comes to defining the structure of a question bank: its design will vary based on your priorities, needs, content type and other factors. Here are a few tips to help you design your structure.

The structure will develop based on a **set of categories**, going from the broadest to the most specific. Here's an example:

**Nomenclatura preguntas:**  
Idioma\_BLOQUE\_Categoría\_Subcategoría\_NivelDificultad\_XXX

**Bloque 1: Álgebra Lineal (21)**

- **Resolución de sistemas (21)**
  - **Factorización LU (10) (6 difíciles / 4 fáciles)**  
Factorizar matrices 2x2 y 3x3 por el método de Crout (se puede cambiar a Doolittle o intercalar especificando en el enunciado), hacer cálculos con L y U
  - **Gauss-Seidel, Jacobi (11) (5/6)**  
Requisitos de convergencia según parámetros, calcular 2<sup>a</sup> y 3<sup>a</sup> iteraciones por Gauss-Seidel y por Jacobi, determinar la matriz de convergencia de Jacobi.
  - **Método de la potencia (0)**

**Image 1 (Source: question bank provided by professor Teresa Sancho)**

In Image 1, the question bank structure will be based on the following items:

- **Language:** Generating categories for the course's languages of instruction is a good starting point. To do this, you'll need to create some questions.
- **Block:** You can then sort them by thematic block.
- **Categories and/or subcategories:** From here, you can create as many categories and/or subcategories as you want, depending on the specificity level you want to achieve.
- **Difficulty level:** After you've reached the final specificity level for your content, you can structure the questions based on difficulty. Before you do this, it's a good idea to

define and describe the difficulty levels to ensure that the questions to be included in each level adhere to consistent criteria.

This is just one possibility, but there are many valid options. Going back to Image 1, another possibility is to sort questions by question type before sorting them by difficulty level. This is a useful option if you have more than one question type. The revised structure would therefore look like this:

Language\_Block\_Category\_Subcategory\_QuestionType\_DifficultyLevel\_XXX

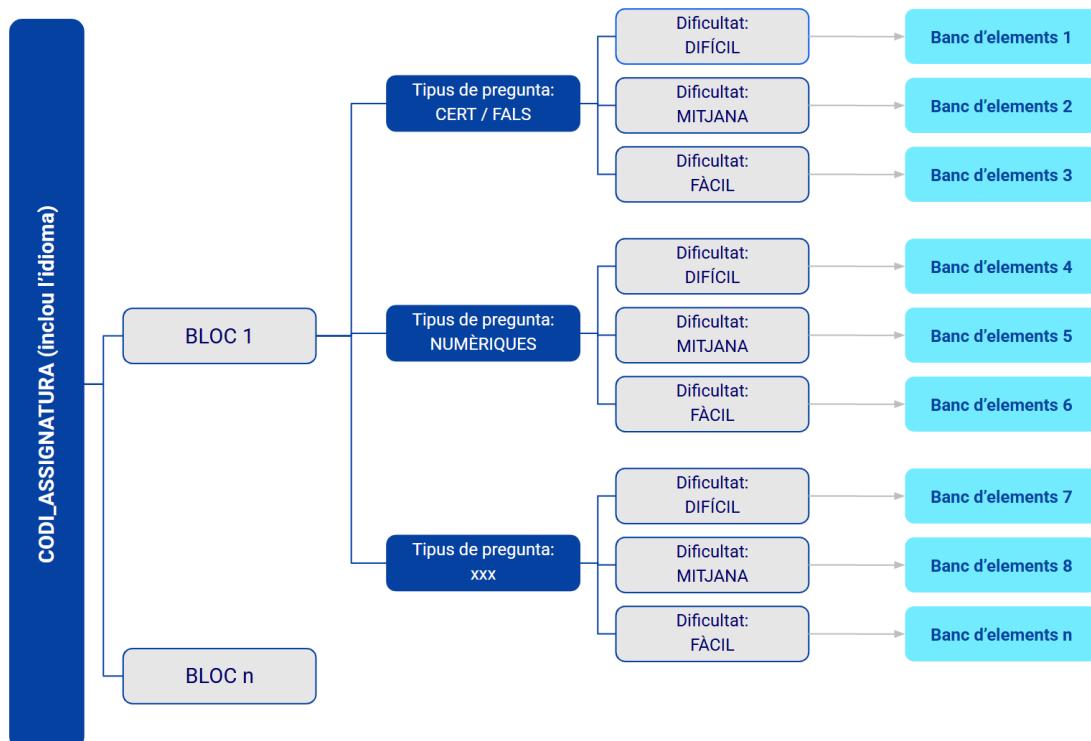


Before you start creating the questions to be included in the bank, we recommend **designing its structure** to make it easier to find the questions based on type, content or difficulty level and ensure that the bank contains questions for every part of the course.

## An item bank for each branch

In the context of CANVAS, the design of this structure will determine the number of item banks required, which is one per branch.

For example:



To help you identify the content of each bank, it may be useful to include all its constituent elements in its name:

**CourseCode\_BLOCK\_QuestionType\_Difficulty**



Having a separate bank for each branch will help **minimize the risk of question repetitions** when creating quizzes based on a random selection of questions from the banks.

For a reminder of the question types available, have a look at the ANNEX "Content types (questions) in Canvas quizzes (New Quizzes)" of the [Guide to creating quizzes and item banks in the Canvas classroom](#).

# A question of weighting

When creating questionnaires, you may also find it useful to **define the weight of each block in advance**. This way, you can see how much of the test (as a percentage) relates to each block.

Let's look at an example → You're teaching a course with the following structure:



This tells you that 20% of the questions will relate to Block 1, 40% to Block 2, 25% to Block 3, and 15% to Block 4.

You can also add difficulty level to the weight variable. There are usually three levels: low, medium and high difficulty.



According to various articles on the creation of objective tests, you should follow these **recommendations**:

- Medium-difficulty questions should account for 50% to 65% of the entire test
- The rest should be split into low- and high-difficulty questions.

# How many questions should my quiz contain?

This is a commonly asked question, and the answer depends on a variety of factors:

- **Question type:** The time needed by a student to answer a question will depend on its type. Selecting a multiple-choice option is not the same as writing an answer.
- **The type of task to be carried out for each question:** For example, even in multiple-choice questions, students may be asked to solve a mathematical operation separately in order to know which answer to select. In such cases, you'll have to take into account the time required to answer the question when calculating how many questions students will be able to solve and answer within the time provided.



# Bibliography

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