

## Mathematics

### Questionnaire for academics

| Specific Competences  | Importance<br>for First Cycle                  | Importance<br>for Second Cycle                 |
|---|--|--|
|   | None Weak<br>Considerable<br>Strong<br>1 2 3 4 | None Weak<br>Considerable<br>Strong<br>1 2 3 4 |
| 1. Profound knowledge of «elementary» mathematics (such as may be covered in secondary education)   | -----  | -----  |
| 2. Ability to construct and develop logical mathematical arguments with clear identification of assumptions and conclusions                           | -----  | -----  |
| 3. Facility with abstraction including the logical development of formal theories and the relationships between them                                  | -----  | -----  |
| 4. Ability to model mathematically a situation from the real world and to transfer mathematical expertise to non mathematical contexts                | -----  | -----  |
| 5. Readiness to address new problems from new areas   | -----  | -----  |
| 6. Capacity for quantitative thinking   | -----  | -----  |
| 7. Ability to extract qualitative information from quantitative data  | -----  | -----  |
| 8. Ability to comprehend problems and abstract their essentials   | -----  | -----  |
| 9. Ability to formulate problems mathematically and in symbolic form so as to facilitate their analysis and solution                                  | -----  | -----  |
| 10. Ability to design experimental and observational studies and analyse data resulting from them   | -----  | -----  |
| 11. Ability to formulate complex problems of optimisation and decision making and to interpret the solutions in the original contexts of the problems | -----  | -----  |
| 12. Ability to use computational tools as an aid to mathematical processes and for acquiring further information                                      | -----  | -----  |
| 13. Knowledge of specific programming languages or software   | -----  | -----  |

| Specific Competences   | Importance<br>for First Cycle                  | Importance<br>for Second Cycle                 |
|--|--|--|
|  | None Weak<br>Considerable<br>Strong<br>1 2 3 4 | None Weak<br>Considerable<br>Strong<br>1 2 3 4 |
| 14. Ability to present mathematical arguments and the conclusions from them with clarity and accuracy and in forms that are suitable for the audiences being addressed, both orally and in writing | -----  | -----  |
| 15. Knowledge of the teaching and learning processes of mathematics  | -----  | -----  |
| 16. Other (specify)  | -----  | -----  |
| 17. Other (specify)  | -----  | -----  |
| 18. Other (specify)  | -----  | -----  |