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CT for STEM prospective teachers:
specific features, approaches and practical solutions

The aim of this module is to further build STEM prospective teachers' understanding of computational thinking (CT) and their knowledge of instruction and assessment of CT, and to facilitate them in embedding CT into their STEM subjects.

For this purpose, participants are expected to

1. acquire knowledge and skills necessary to embed CT into their practice
2. apply CT in concrete examples in STEM
3. understand, describe and apply design principles for teaching and learning CT and assessment strategies for CT in STEM
4. design learning activities and materials that incorporate CT into their STEM subject.

The module enables prospective teachers to embed CT skills into their STEM classes. To this end, it is organised into three units: Unit 1 engages prospective teachers in CT by providing various examples in STEM education; the unit also emphasises modelling and simulation through different tools (e.g., Netlogo, Excel); Unit 2 further highlights design principles for teaching and learning CT, reflective strategies as well as assessment strategies for CT in STEM subjects. The module concludes with Unit 3 which provides prospective teachers with hands-on experience in designing CT activities for their STEM subject.