

## Teaching a Project-based Course at a Safe Distance: An Experience Report

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*Abstract*—IT security is an important aspect of system design and of quality assurance during the software engineering process. Today, there is a big demand for IT security specialists in job markets around the world. Increased automation of security code reviews is one approach for mitigating the current shortage of IT security professionals. We designed the course “Formal Methods for IT Security” to teach undergraduate students the basics of constraint solving and formal modeling techniques suitable for automation of IT security code reviews in a hands-on format. In this paper, we describe the didactic concept of the course along with the required modifications due to the COVID-19 pandemic. Further, we report our experience from remote teaching the

instance of this new course, which we planned as a project-based format. Apart from aligning well with our own interests and the current demand for security experts, the main focus of the computer science education at TU Dortmund University is the theoretical foundations of computer science and covers large parts of the theoretical literature for system description and system design. The students have a basic understanding of abstract interpretation techniques, symbolic models of source code execution, and decidability in logic. Given these starting conditions, we decided that a hands-on project demonstrating

## Conclusion:

- Structure Communication
- Allow Practical Experience
- Chances for Higher Employability

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