Lecture 15 – Course recap

TEK4500

06.12.2023

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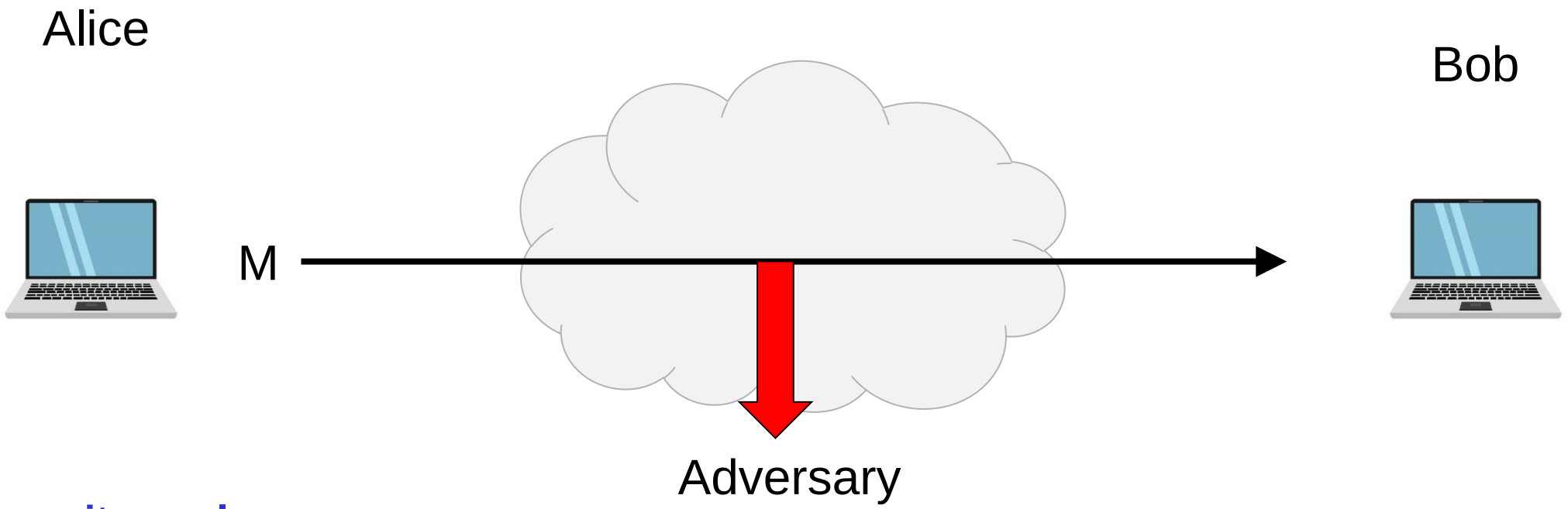
Agenda

- Info on Heidelberg Laureate Forum by Hagen Echzell
- Recap of course
- Q&A
- Go through exam from 2022 (offline)

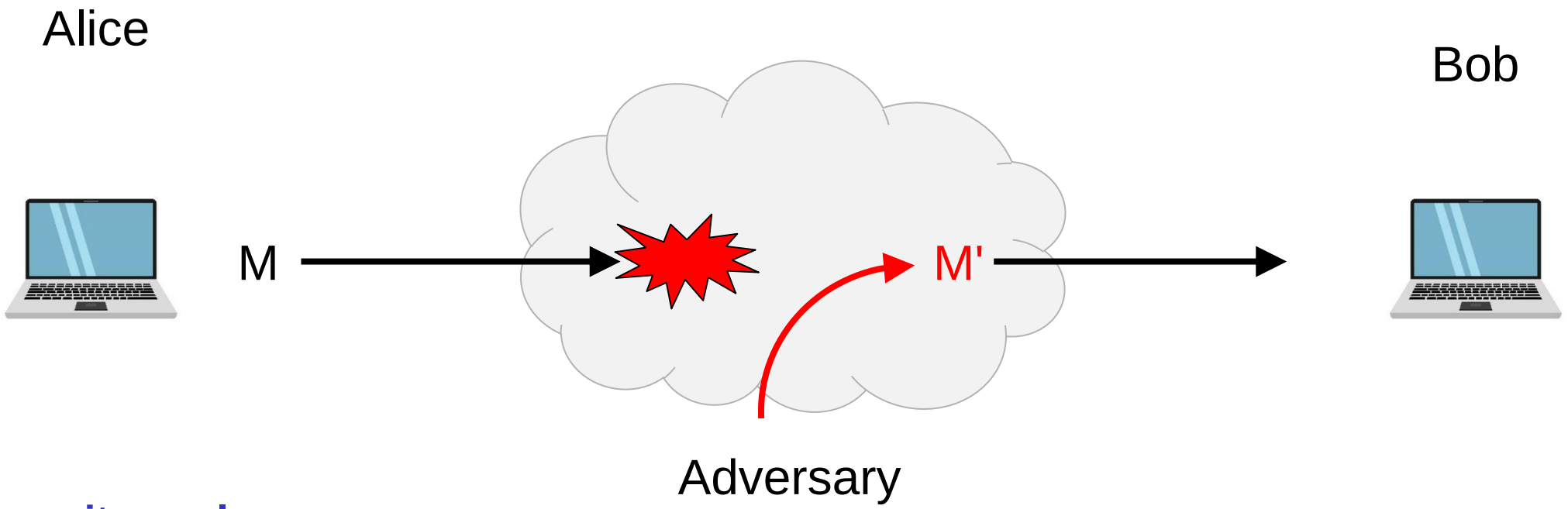
What is cryptography?



Security goals:

- **Data privacy:** adversary should not be able to *read* message M

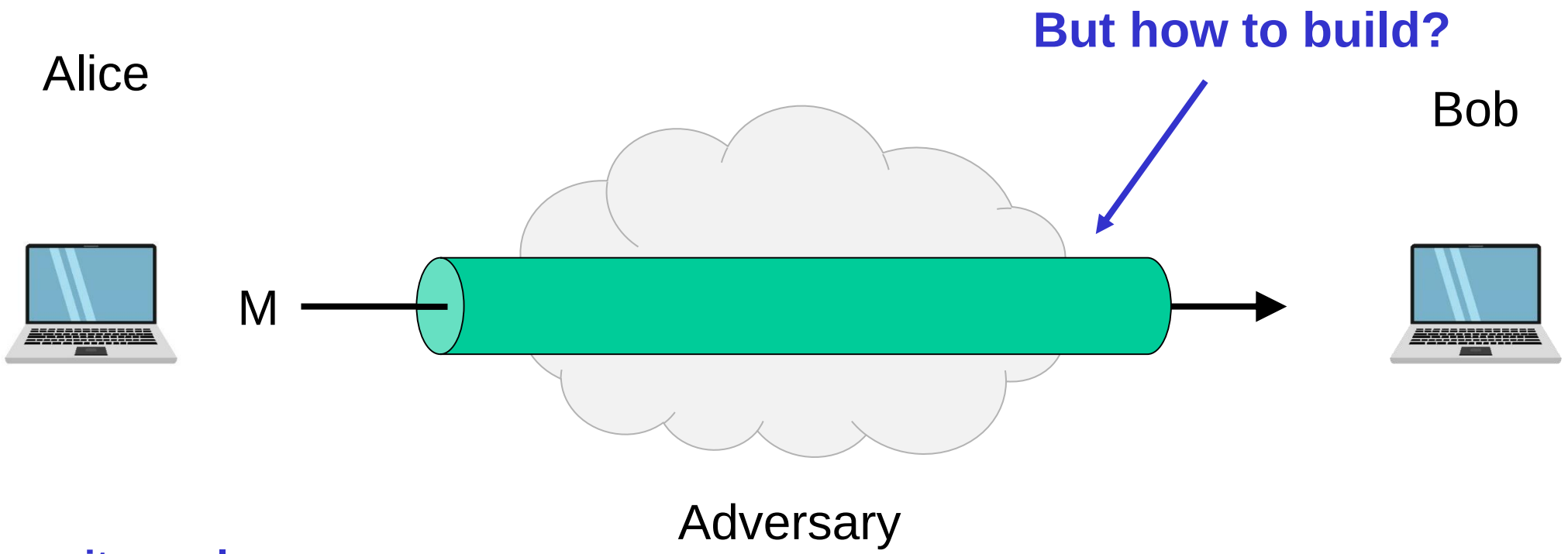
What is cryptography?



Security goals:

- **Data privacy:** adversary should not be able to *read* message M
- **Data integrity:** adversary should not be able to *modify* message M
- **Data authenticity:** message M really originated from Alice

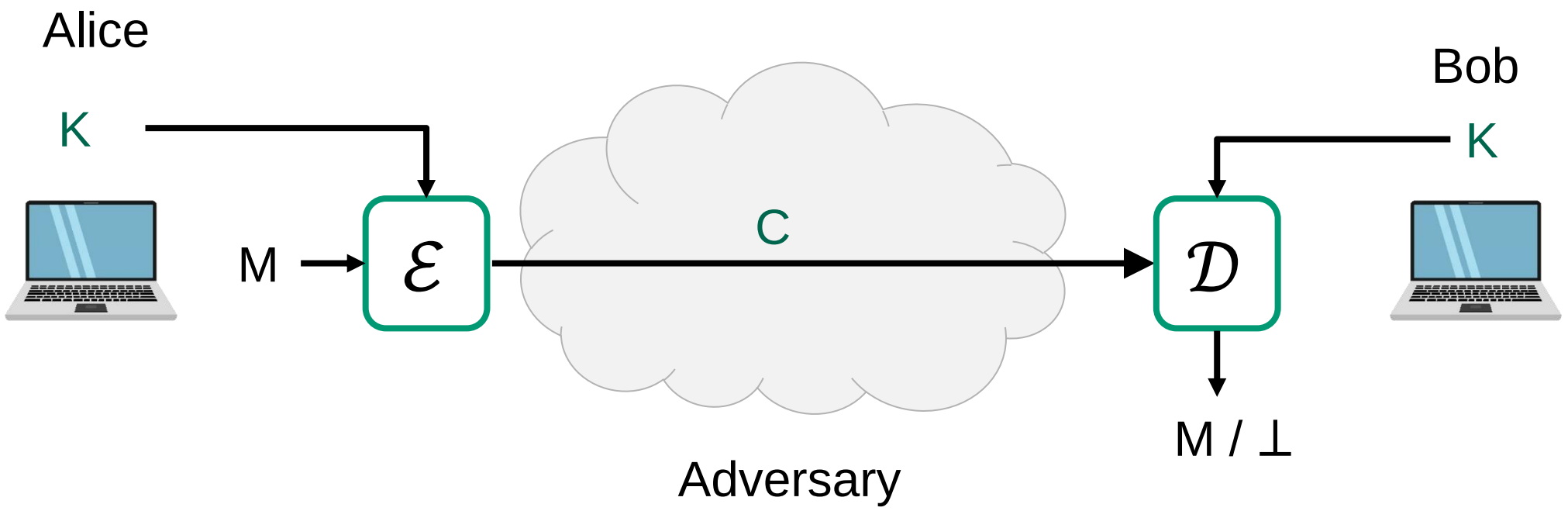
Ideal solution: secure channels



Security goals:

- **Data privacy:** adversary should not be able to *read* message M ✓
- **Data integrity:** adversary should not be able to *modify* message M ✓
- **Data authenticity:** message M really originated from Alice ✓

Creating secure channels: encryption schemes

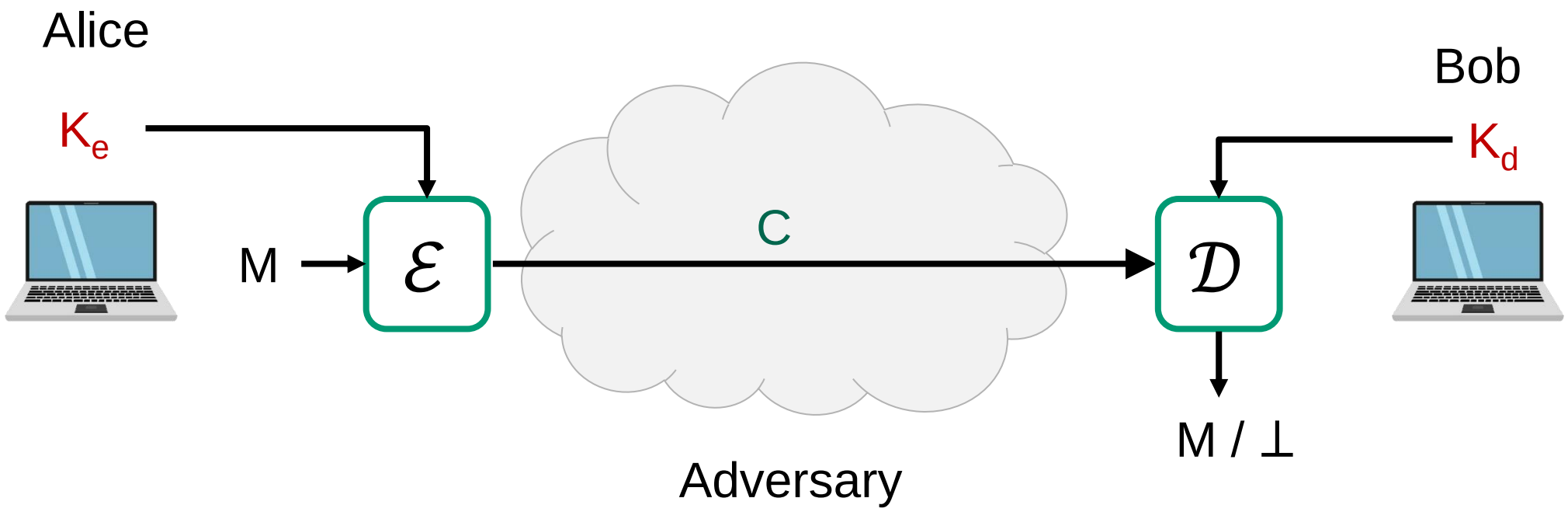


$\mathcal{E}$ **:** encryption algorithm (public)

K : encryption / decryption key (secret)

$\mathcal{D}$ **:** decryption algorithm (public)

Creating secure channels: encryption schemes



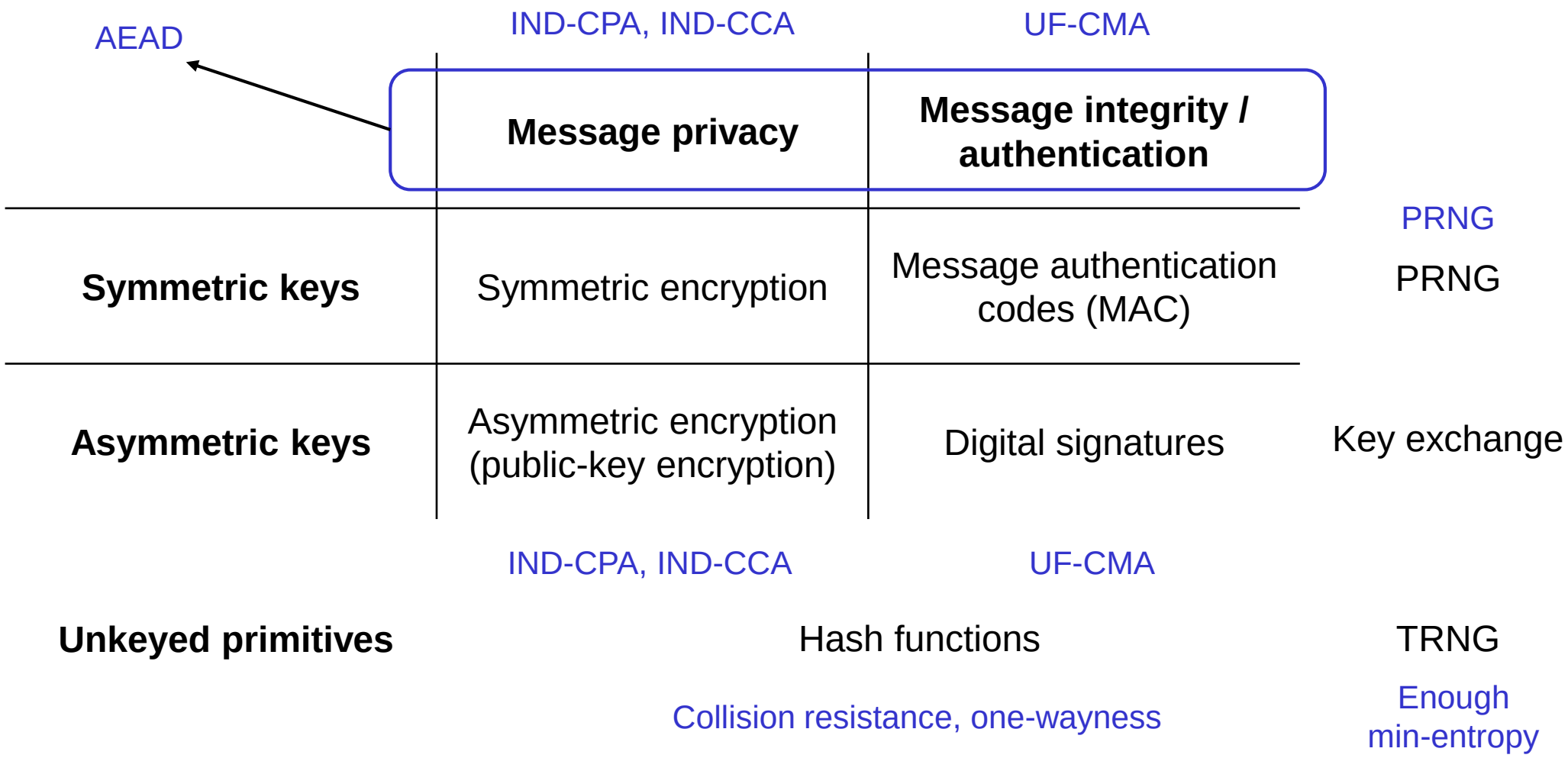
$\mathcal{E}$: encryption algorithm (public)

$\mathcal{D}$: decryption algorithm (public)

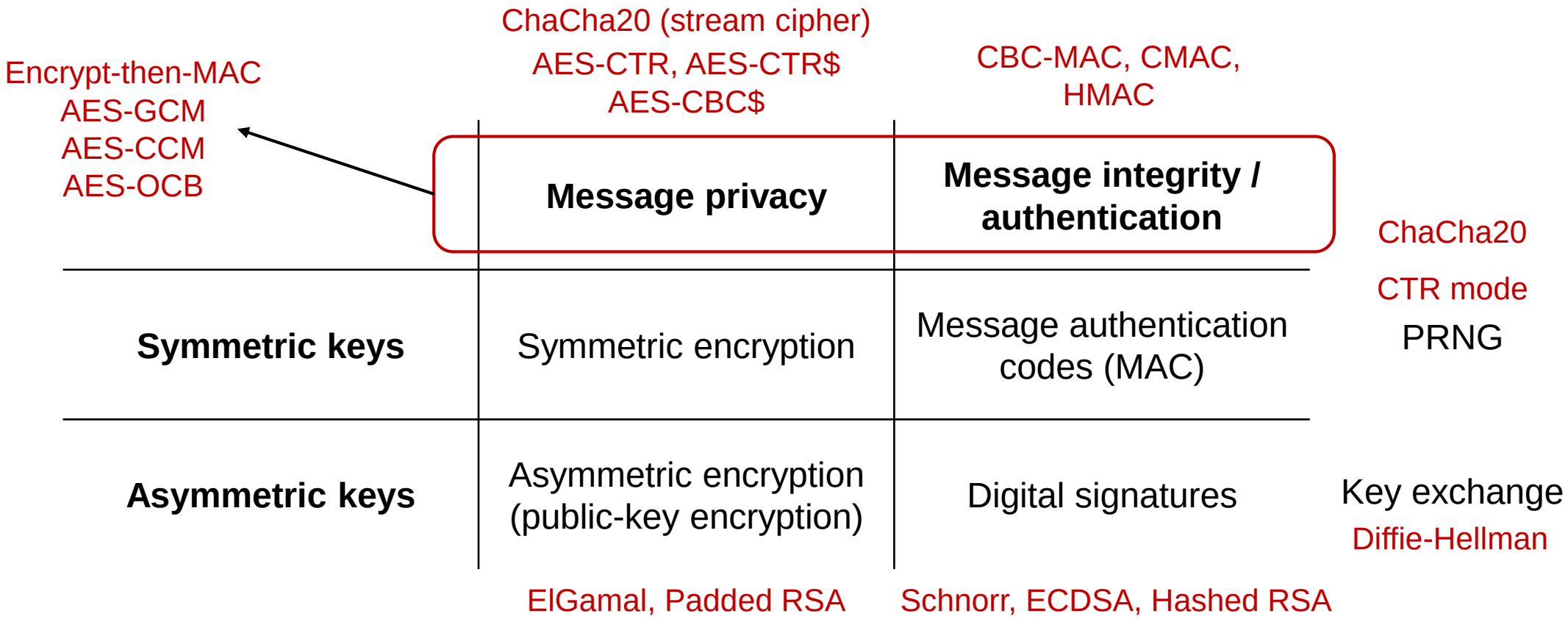
K_e : encryption key (public)

K_d : decryption key (secret)

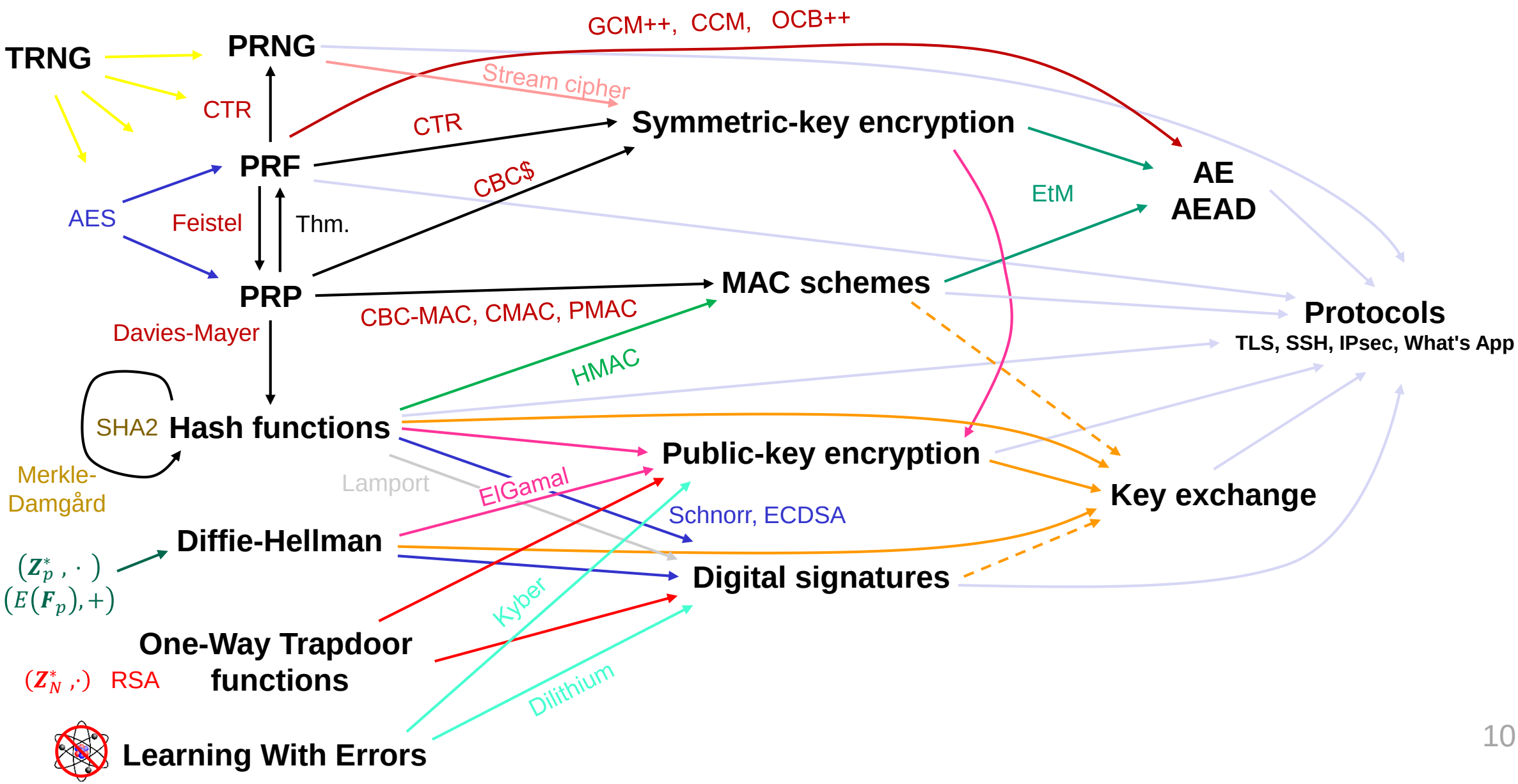
Basic goals of cryptography



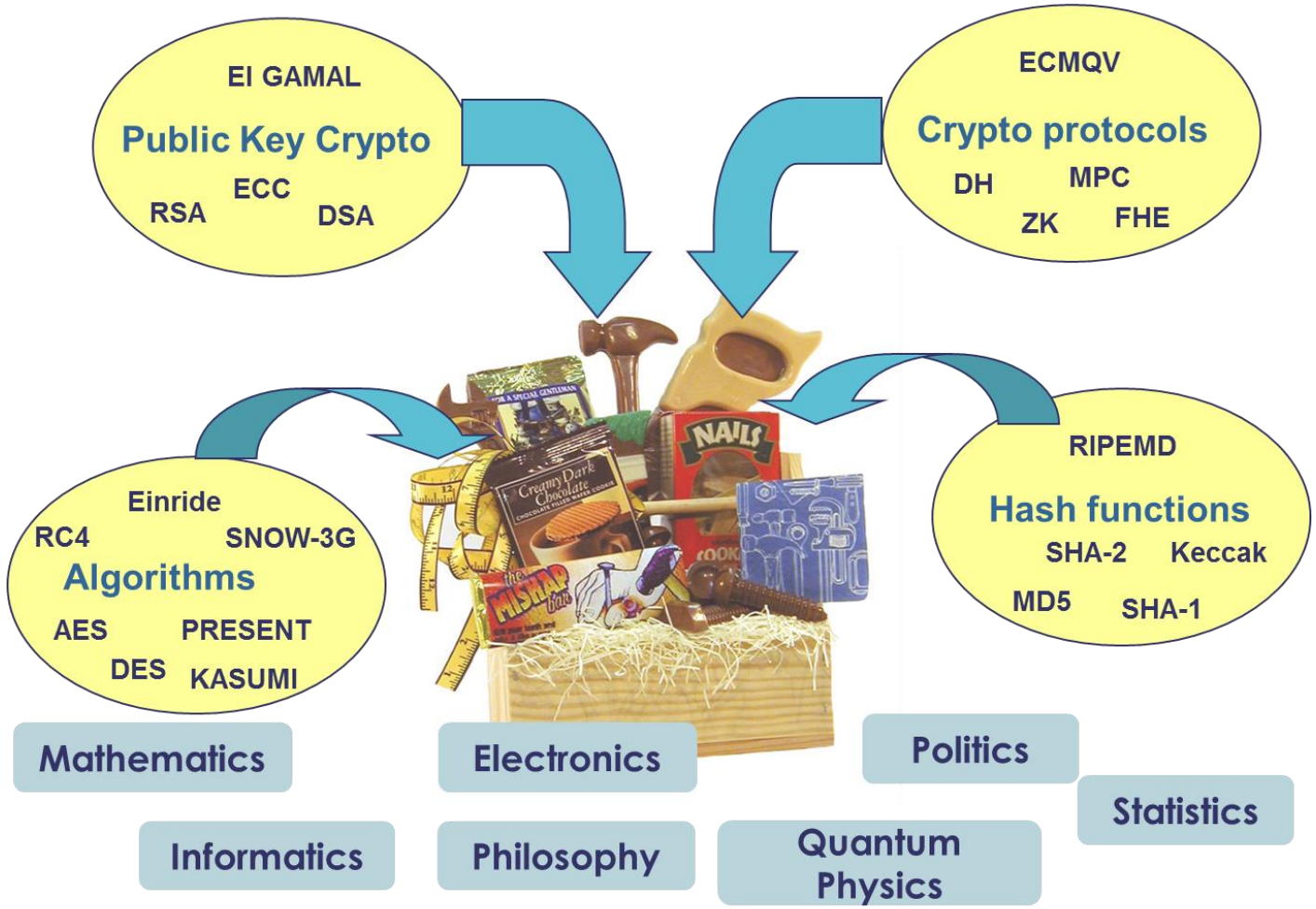
Basic goals of cryptography



Constructions and relations



The crypto toolbox



Exam

- Tuesday December 19, 15:00-19:00 (4 hours)
- Digital, on-campus (Silurveien 2, Sal 3B)
- Closed-book