Conflict in Cyberspace

Graduate Seminar

Fall 2023

Instructor: Anton Sobolev

TAs: Rahul Thakar

Week 1: Introduction and Class Logistics

Goals

- Introduce a broad context of cybersecurity ⤳ [political] conflict
  - Security: Physical Space VS Cyber Space
- Critical Thinking ⤳ Scientific Reasoning [my next class]
  - Information consumption (academic articles, technical reports, news)
  - New knowledge production (identify a problem, formulate a proper question, required means)
- How to work with data (in **R**)
  - Collect, process, and visualize ⤳ Descriptive inferences
  - Replicate ⤳ Conduct your own analysis

⤳ Ability to solve complex tasks / find answers
to questions you did not face before

Place of this class in the program

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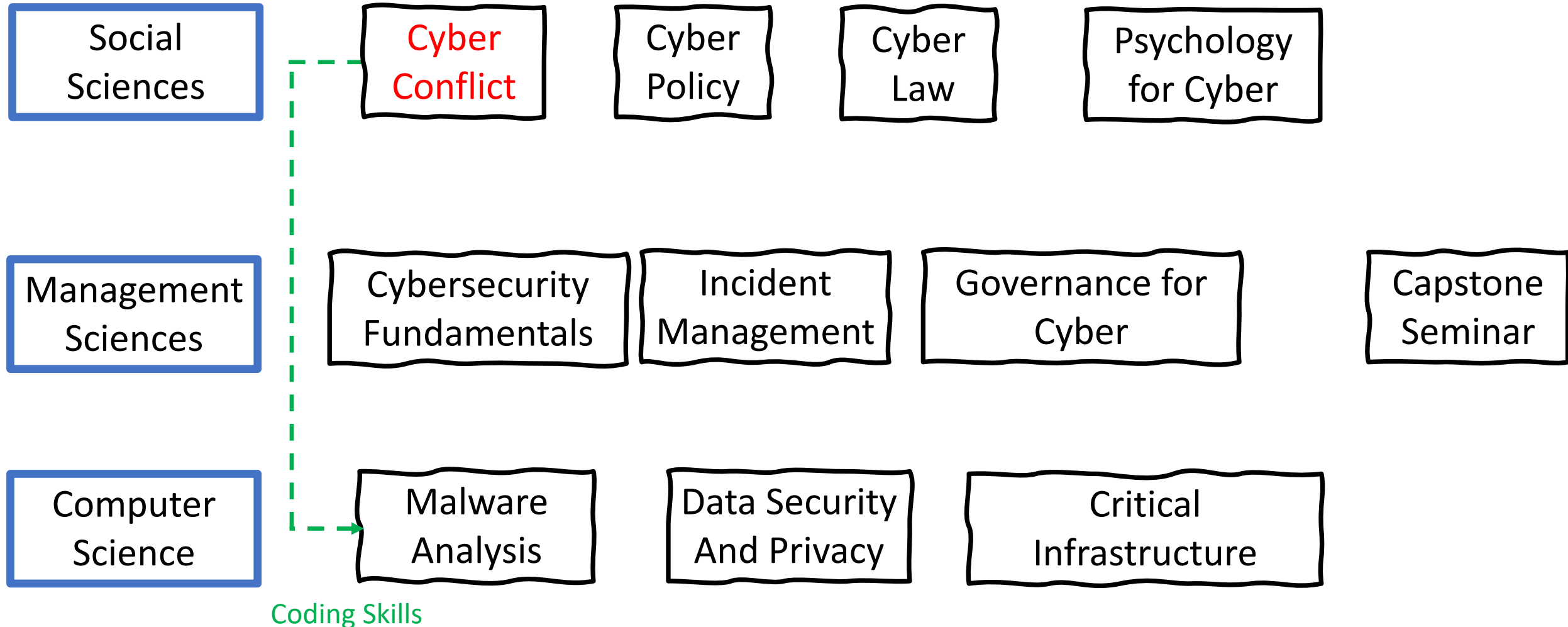
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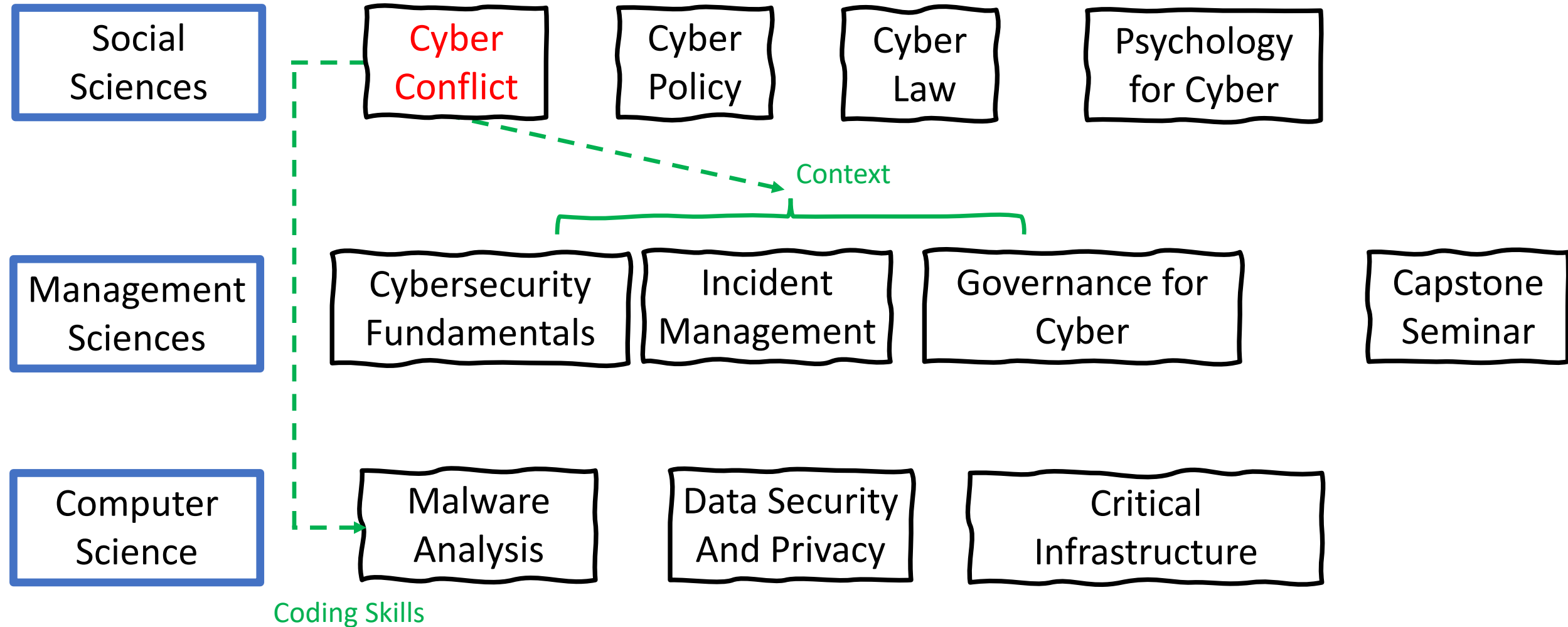
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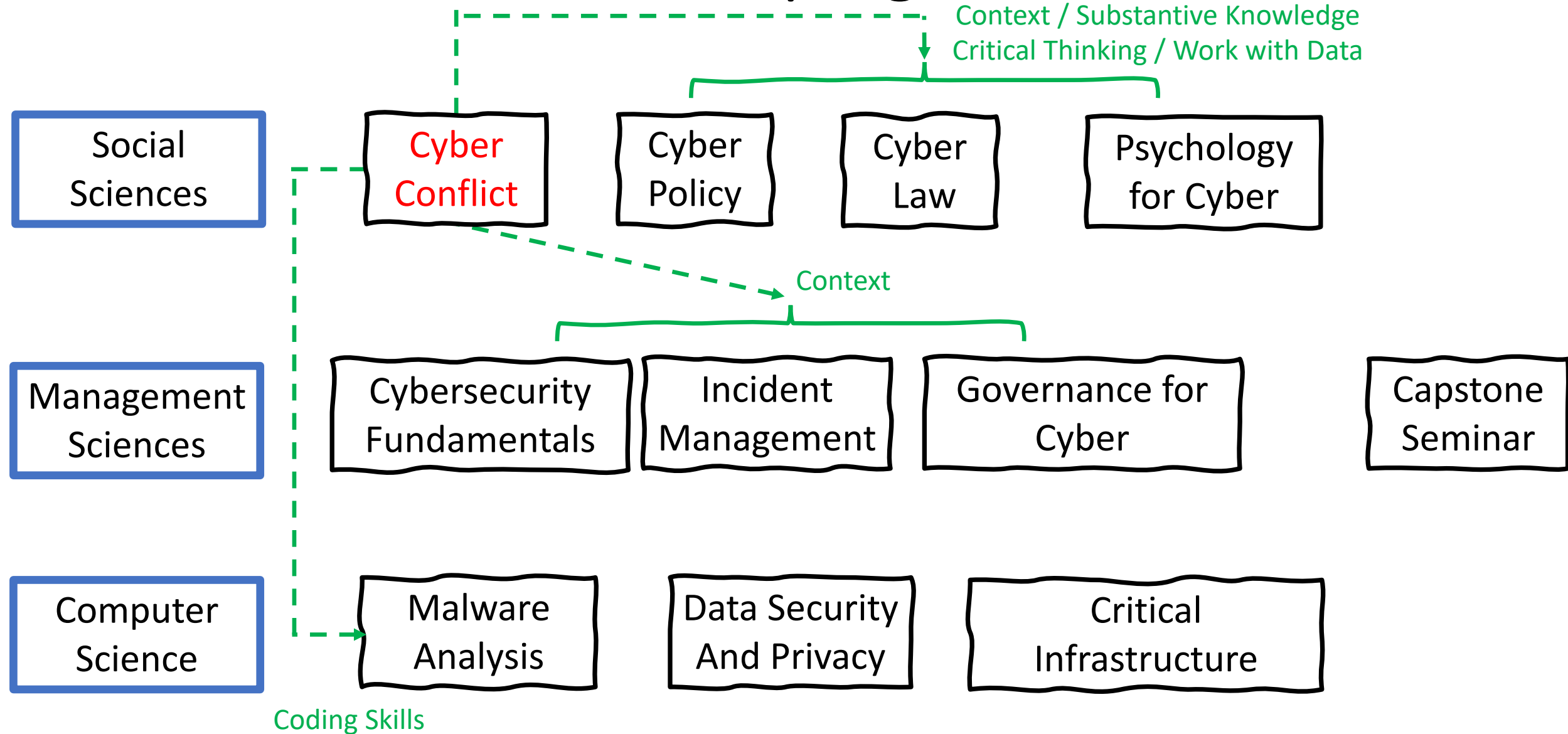
Roadmap

Module 1. Background: History, Frameworks, and Tools
Understanding conflict
A brief history of communications
Technology steps in
Module 2. Cyberspace: The Current Scene
How to work with conflict-related data: Workshop
Cyberspace: Governing and capabilities
Preparing for the conference
Political map of cyberspace: Mini-conference
Module 3. Cyber Conflicts: Selected Topics
How cyberspace changes military operations
How cyberspace changes civil resistance
Content moderation & Internet censorship
Module 4. Cyber Aspects of Conflict: Case-Studies
Domestic conflicts
International conflicts
Fall Break: No class
Group Presentations - 1
Group Presentations - 2

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Com. Technology

Com. Technology ⤳ Conflict

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What is a cyberspace and how to study it?

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How cyberspace shapes conflict

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What is a cyberspace and how to study it?

How cyberspace shapes political conflict

Learn to produce your own research

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Problem Sets

Intro to R
Data Management
Data Visualization
OpenAI Assistance

Learn to describe a case-study with data

Learn new methods on your own

Learn to evaluate research by replication

Learn to produce your own research

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Arab Spring
Russia-Ukraine war
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Intro to R

Descriptive Inferences

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Network Analysis

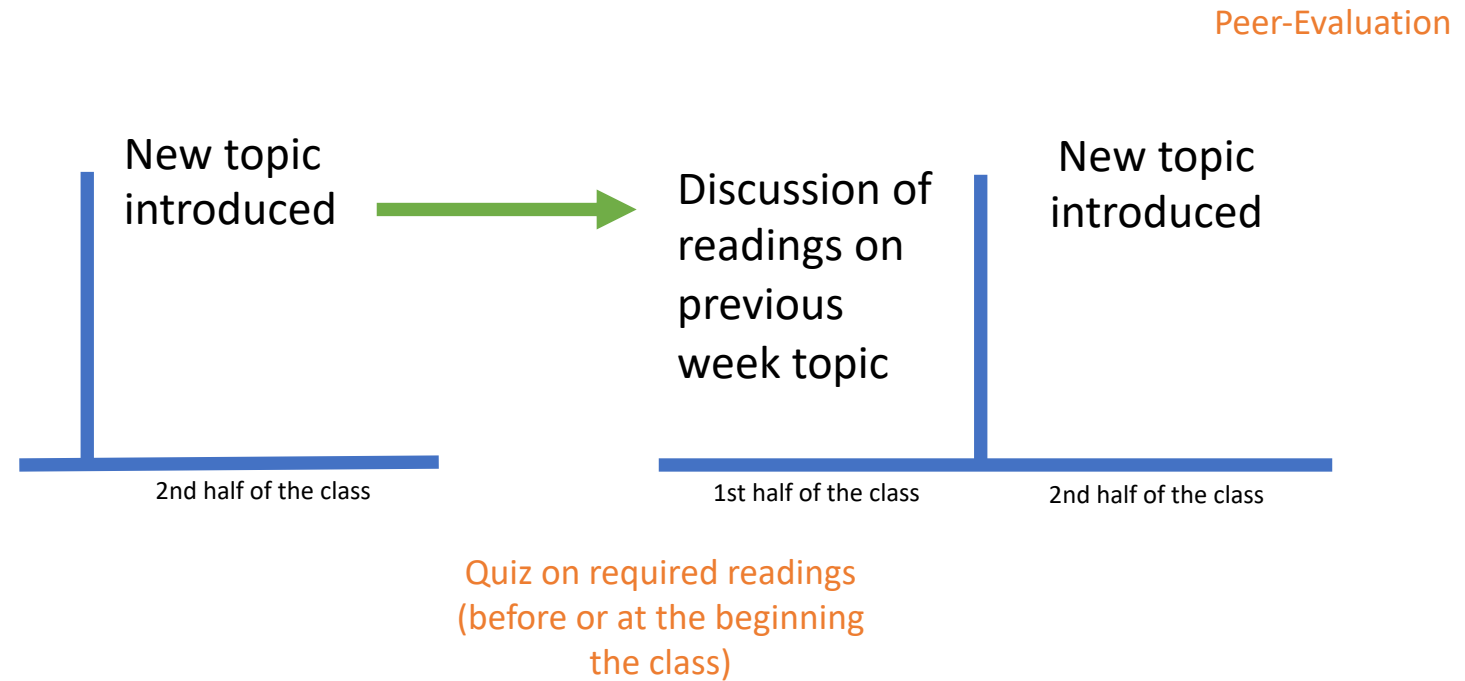Learn new methods on your own

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How class is organized

During the week

New topic introduced

Discussion of readings on previous week topic

New topic introduced

2nd half of the class

1st half of the class

2nd half of the class

Peer-Evaluation

Quiz on required readings (before or at the beginning the class)

How class is organized

During the week

New topic introduced

Discussion of readings on previous week topic

New topic introduced

2nd half of the class

1st half of the class

2nd half of the class

Quiz on required readings (before the class)

Inside the classroom

Required readings discussion lead by group 1

New topic introduced
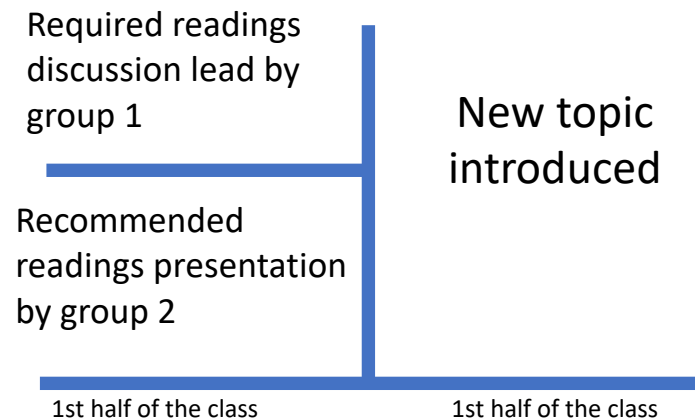
After-discussion reactions (class forum, due next class)

Recommended readings presentation by group 2

1st half of the class

1st half of the class

Schedule by weeks

Activity	Module 1. Background				Module 2. The Current Scene		
	W1	W2	W3	W4	W5	W6	W7
Discussion			G1	G3	G6	G4	
Presentation			G5	G4	G3	G2	Presentations
Other		L	L	L	W	W	

Module 3. Selected Topics						Module 4. Case-Studies		
W8	W9	W10	W11	W12	W13	W14	W15	W16
W	G1	G2/G3	G4	G5	G6			
	G6	G1	G5/G4	G3/G2	G1	Fall Break		Presentations
L	L	L	L	L	C			

Grading

Outside the classroom

DC Assignments	20
Quizzes before the class	10

Classroom activities

Attendance	5
Participation	10
Lead Discussion (2)	10
Paper Presentation (2)	10

Group projects

Mini-conference Presentation	5
Group Project Presentation	10
Peer Assessments	20

Next steps

- Register on DataCamp and complete the Assighment #1 and #2
- Take class survey: office hours, deadlines
- Read the required readings for the next class

Next week class
- Reading Quiz 1
- Coding Quiz 2
- Bring Laptops!

Textbooks

CYBERSECURITY
Politics, Governance and Conflict in Cyberspace
Damien Van Puyvelde
Aaron F. Brantly

THINKING CLEARLY WITH DATA
A Guide to Quantitative Reasoning and Analysis
Ethan Bueno de Mesquita
Anthony Fowler

The Art of Cyberwarfare
An Investigator's Guide to Espionage, Ransomware, and Organized Cybercrime
Jon DiMaggio
no starch press