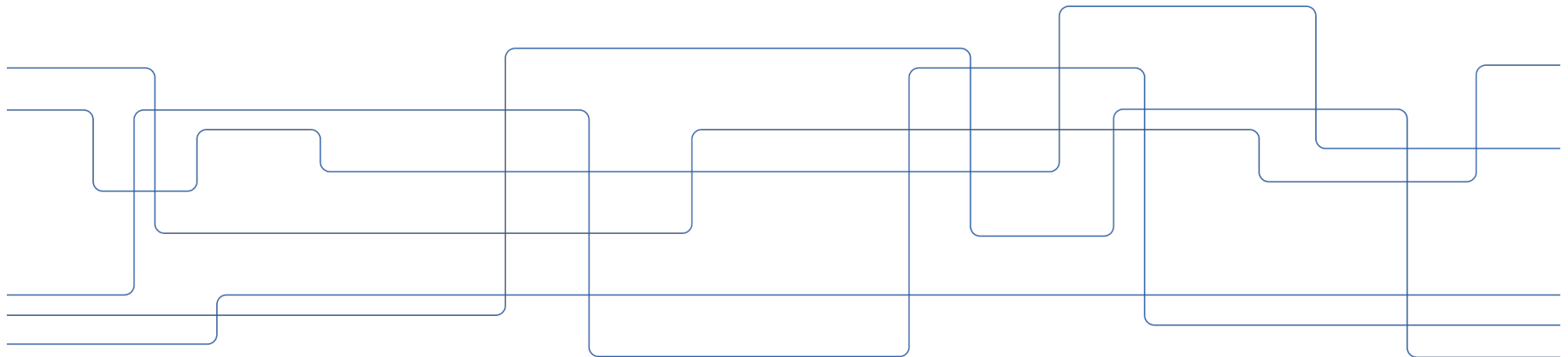


Master's Programme in Computer Science

Philipp Haller, Programme Director
Associate Professor, School of Electrical Engineering and Computer Science



Master's in Computer Science

- **Computer Science**

- Scientific methods for constructing computer programs, including theoretical foundations as well as practical skills for developing products and systems that include computer hardware and software.

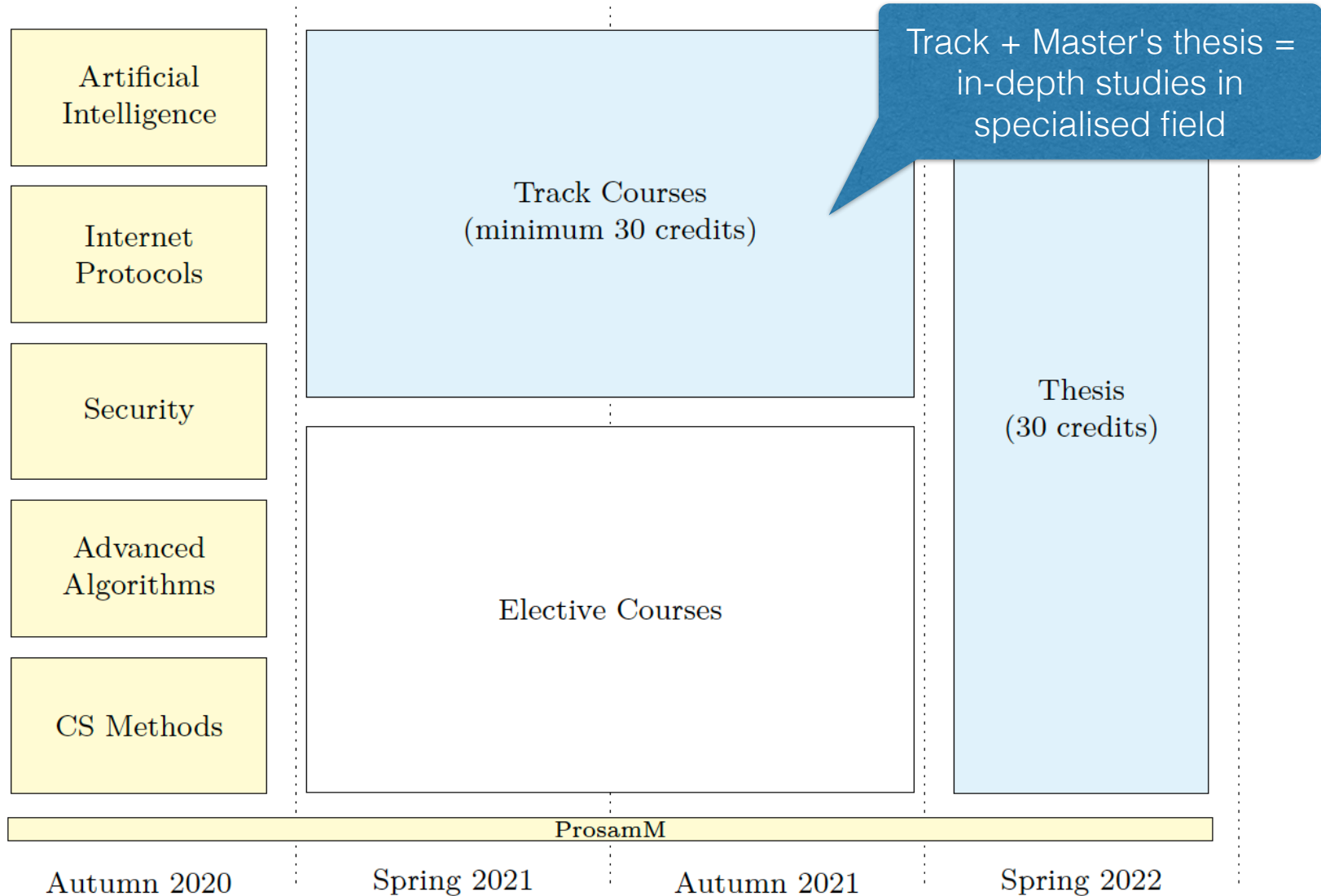
- **Education**

- A broad education in computer science with opportunities to go deep and specialise within the field.

- **Career Opportunities**

- **Careers in industry:** software developer, IT consultant, game developer, IT designer, IT project manager, systems engineer, business process engineer
- **Careers in research:** excellent opportunities for *doctoral studies* all over the world

Programme Overview



Mandatory Courses

A blue speech bubble with a white border, containing the text "Breadth in Computer Science".

Breadth in
Computer Science

- ***Regular courses***

- DD2440 Advanced Algorithms, 6 credits
- DD2395 Computer Security, 6 credits
- IK2218 Protocols and Principles of the Internet, 6 credits
- DD2380 Artificial Intelligence, 6 credits

- ***Cross-cutting and integrating courses***

- DA2210 Introduction to the Philosophy of Science and Research Methodology for Computer Scientists, 6 credits
- DD2300 Program Integrating Course in Computer Science, 2 credits

Specializations: Overview

- ***Cognitive Systems***
- ***Data Science***
- ***Interaction Design***
- ***Scientific Computing***
- ***Security and Privacy***
- ***Software Technology***
- ***Theoretical Computer Science***
- ***Visualization and Interactive Graphics***

- 
- A large blue speech bubble with a white border, containing two bullet points.
- Substantially deeper knowledge
 - Insights into current research and development

Connection to Current Research

- Each track is ***directly connected to research groups*** at KTH active in current international research
 - All research areas at the School of Electrical Engineering and Computer Science:
<https://www.kth.se/en/eecs>
 - Research funded by various agencies and foundations (VR, ERC, KAW, EU, etc.)



European Research Council
Established by the European Commission
**Supporting top researchers
from anywhere in the world**

- ***Opportunity to work on cutting-edge research*** as part of your Master's thesis

- Master's students co-author scientific papers in international conferences and journals!

Boost your CV!

Specializations 1–4

- ***Cognitive Systems***
 - Computer vision, robotics, conversational systems, speech technology
- ***Data Science***
 - Machine learning, natural language processing, information retrieval, probabilistic graphical models
- ***Interaction Design***
 - Human-computer interaction, user-centred design
- ***Scientific Computing***
 - Physical simulations, supercomputers, high-performance computing, parallel/brain-inspired systems, visualisation

Specializations 5–8

- ***Security and Privacy***
 - Integrity, cryptography, system security
- ***Software Technology***
 - Software engineering, DevOps, parallel and distributed computing, programming languages, compilers
- ***Theoretical Computer Science***
 - Complexity theory, cryptography, formal methods
- ***Visualization and Interactive Graphics***
 - Information visualisation, graphics with interaction, game development

Track Details

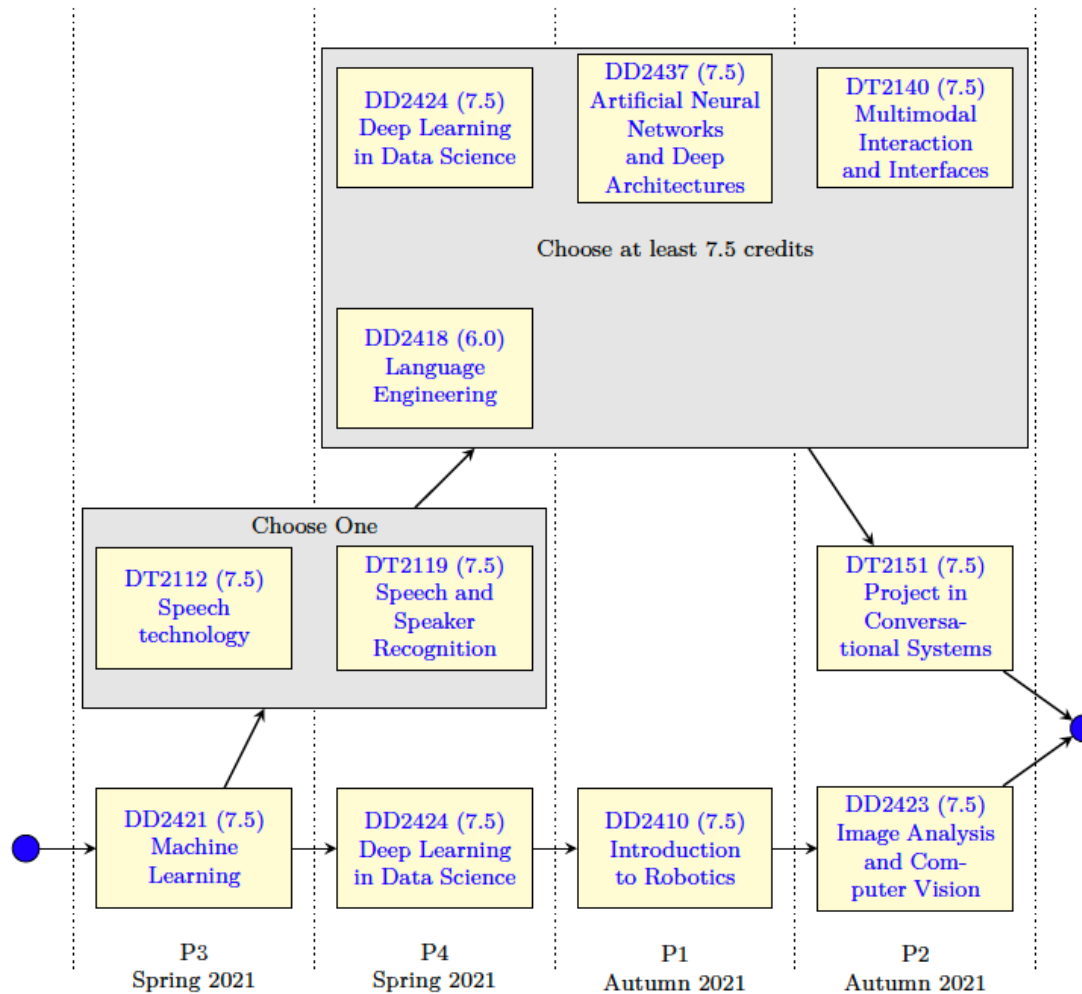


Figure 1: CSCI — Cognitive Systems

Track Details

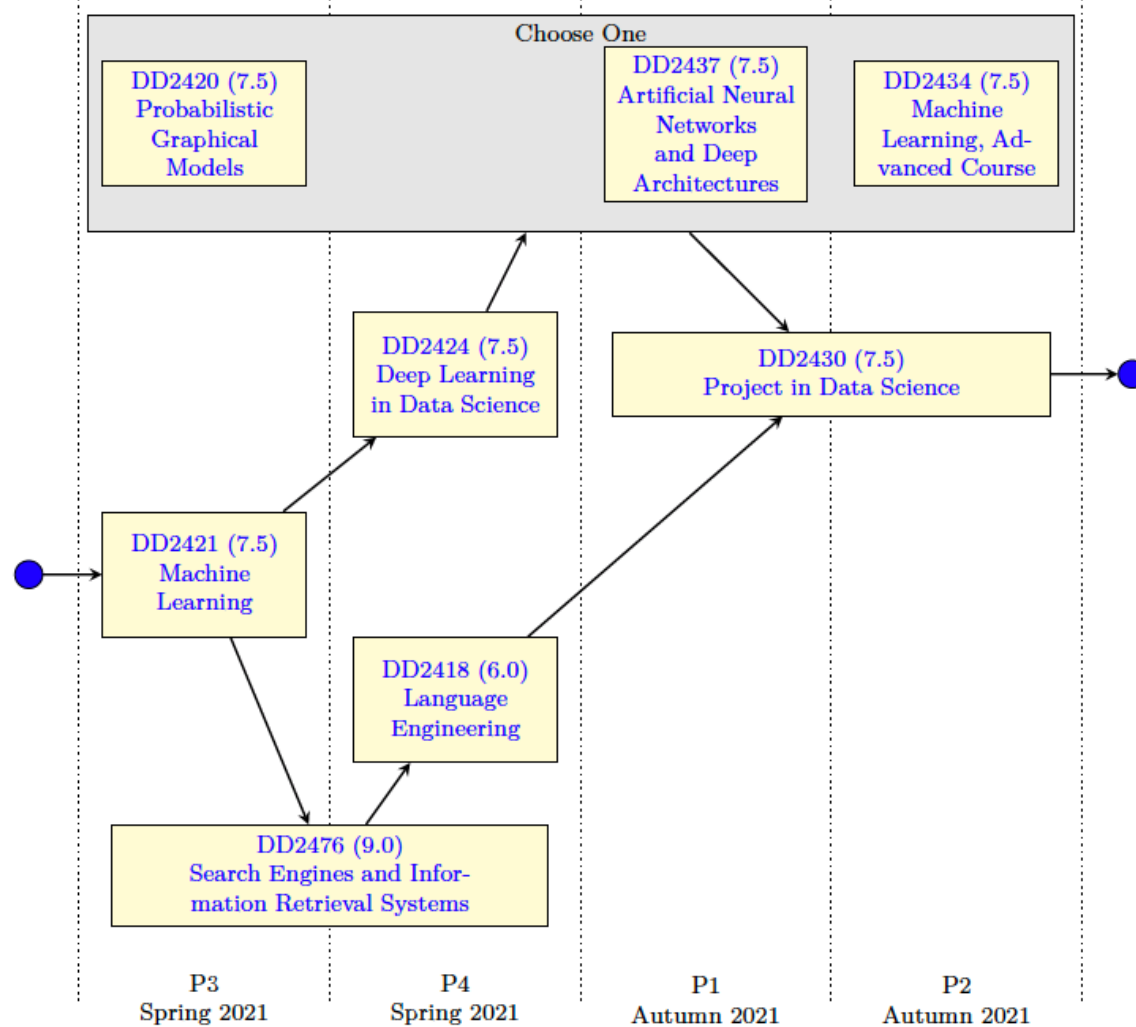


Figure 2: CSDA — Data Science

Track Details

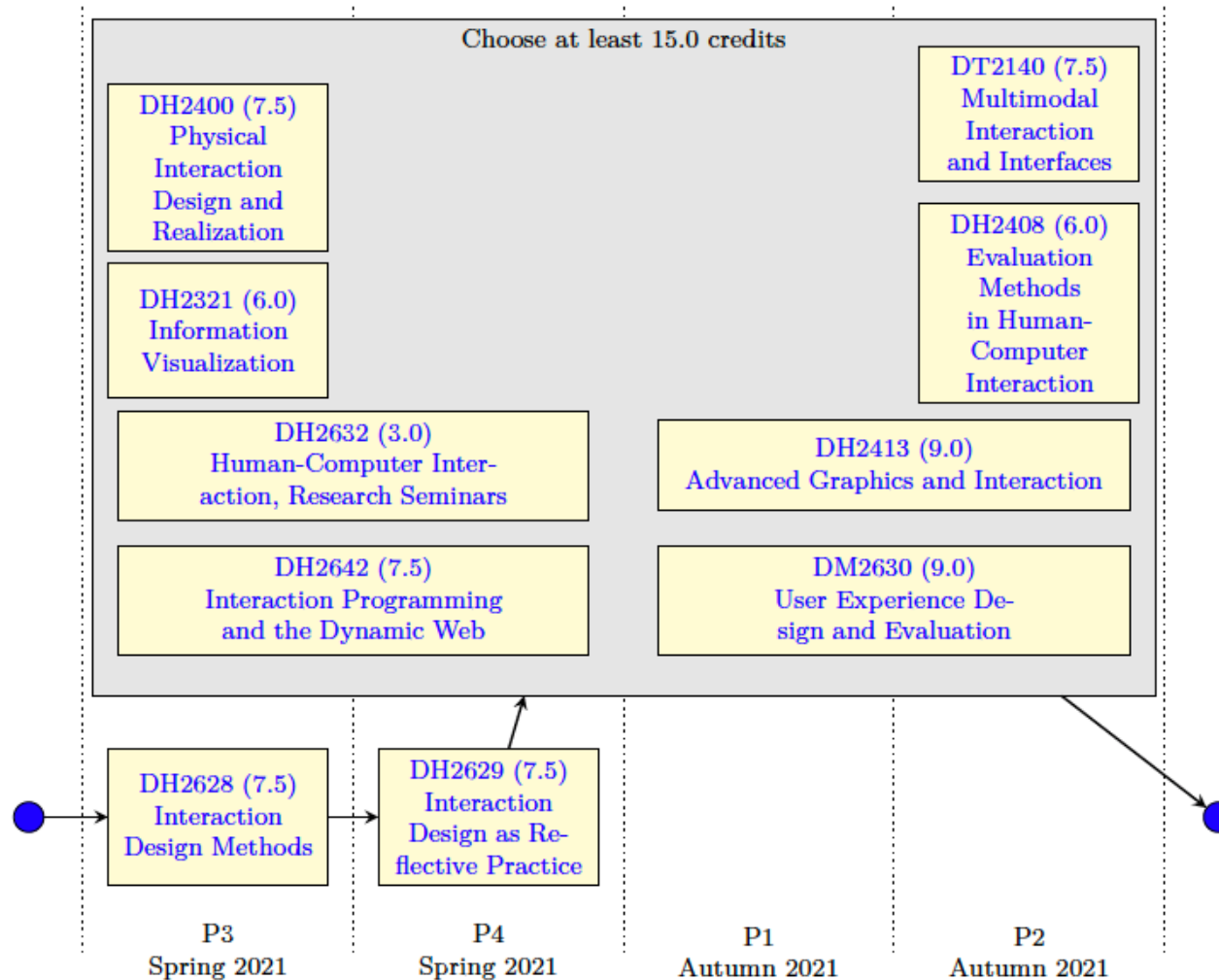


Figure 3: CSID — Interaction Design

Track Details

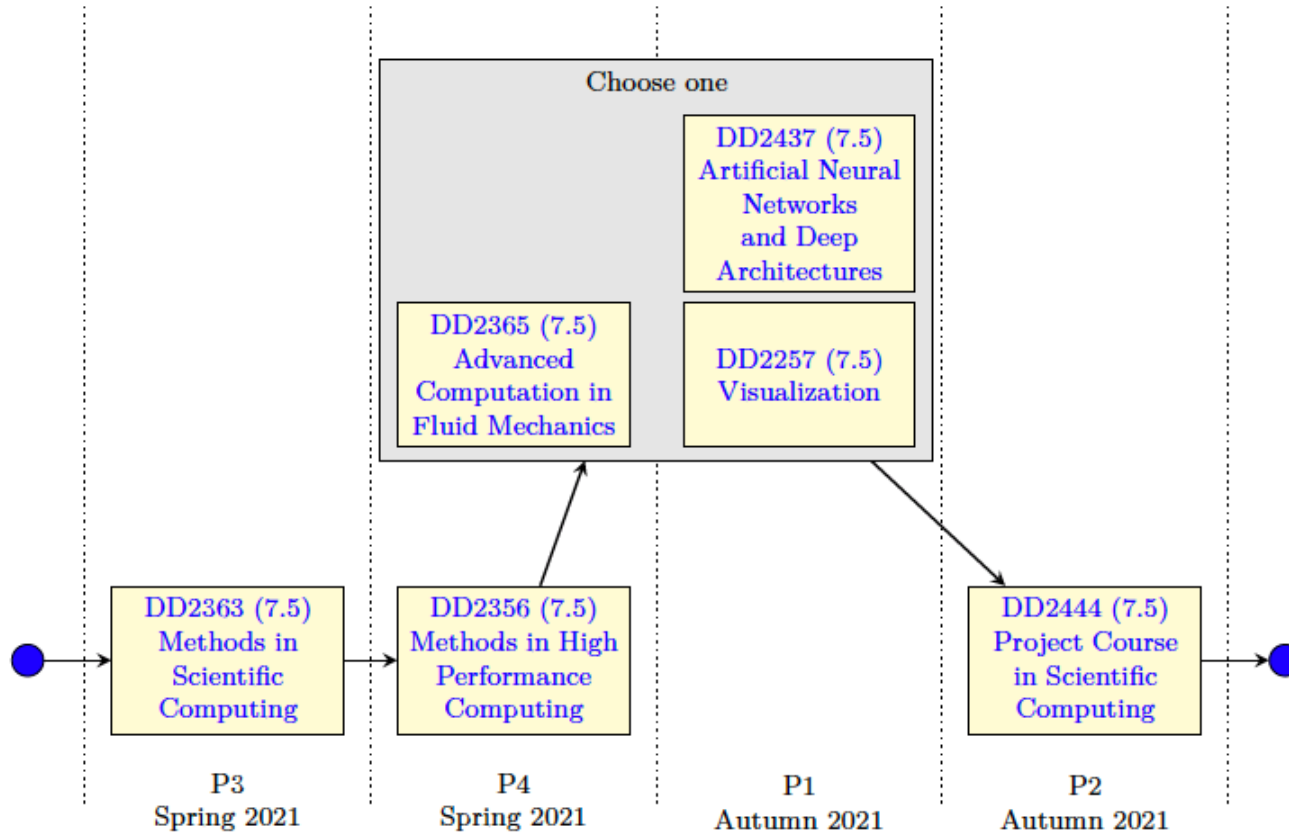


Figure 4: CSSC — Scientific Computing

Track Details

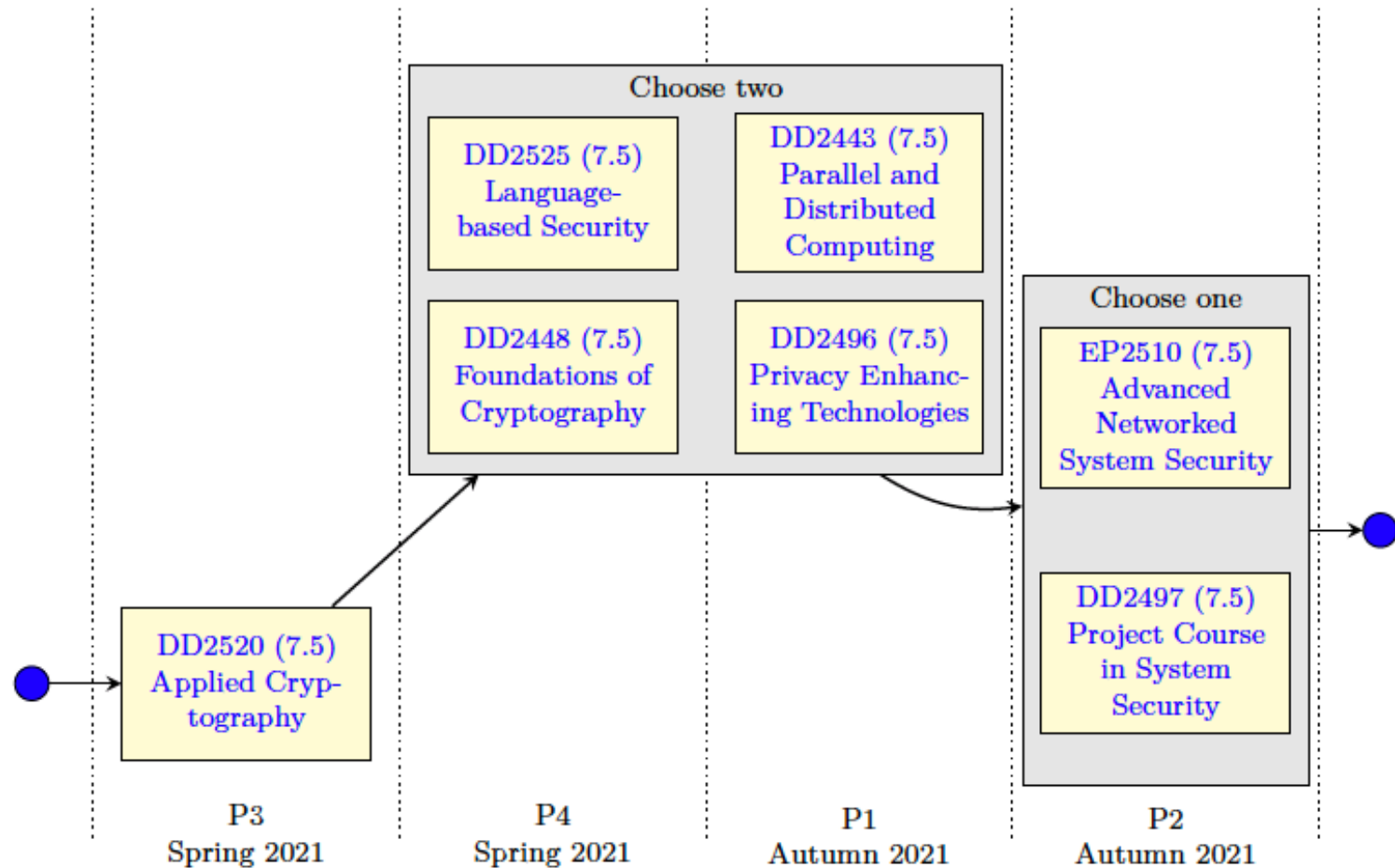


Figure 5: CSSP — Security and Privacy

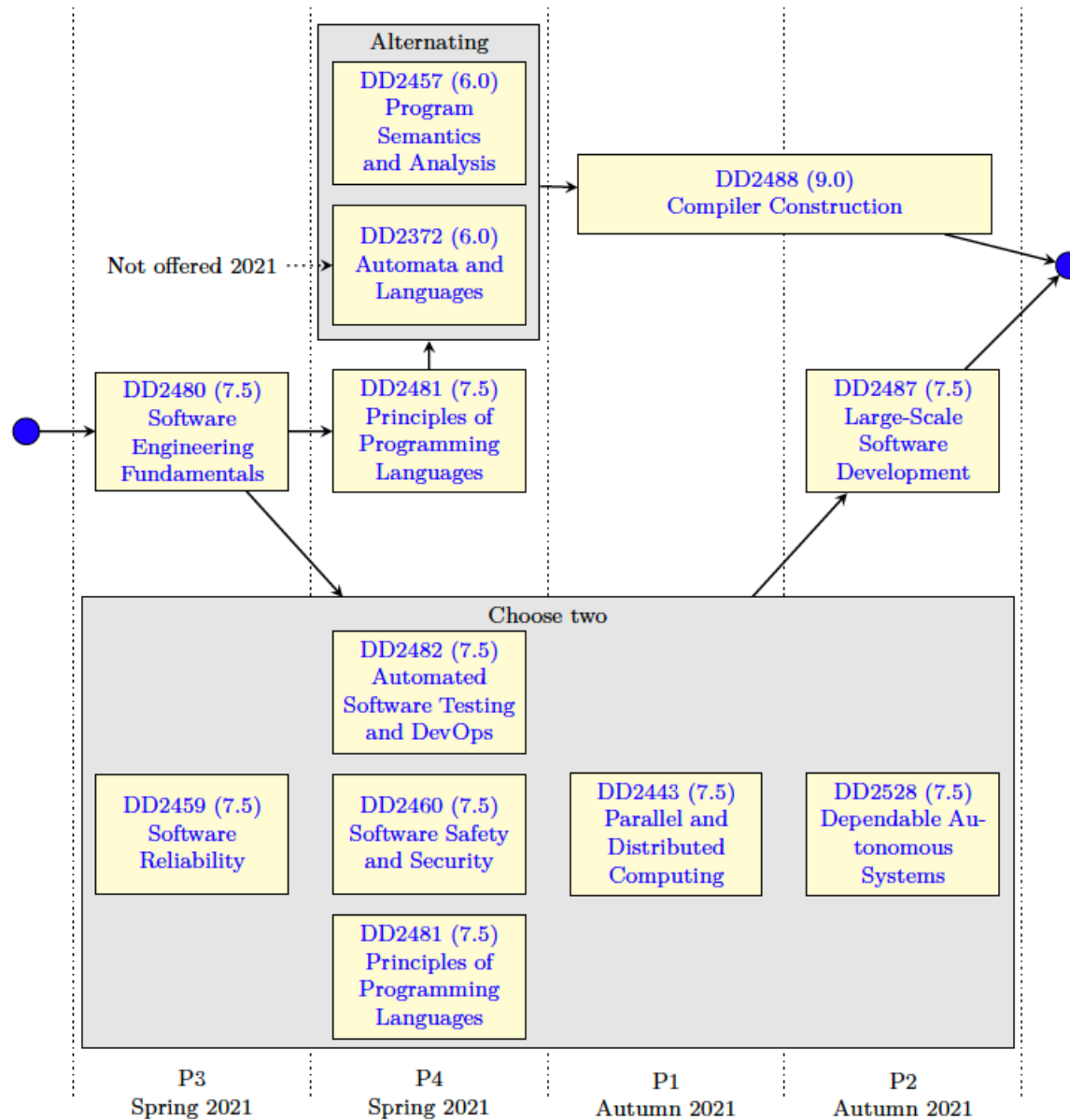


Figure 6: CSST — Software Technology

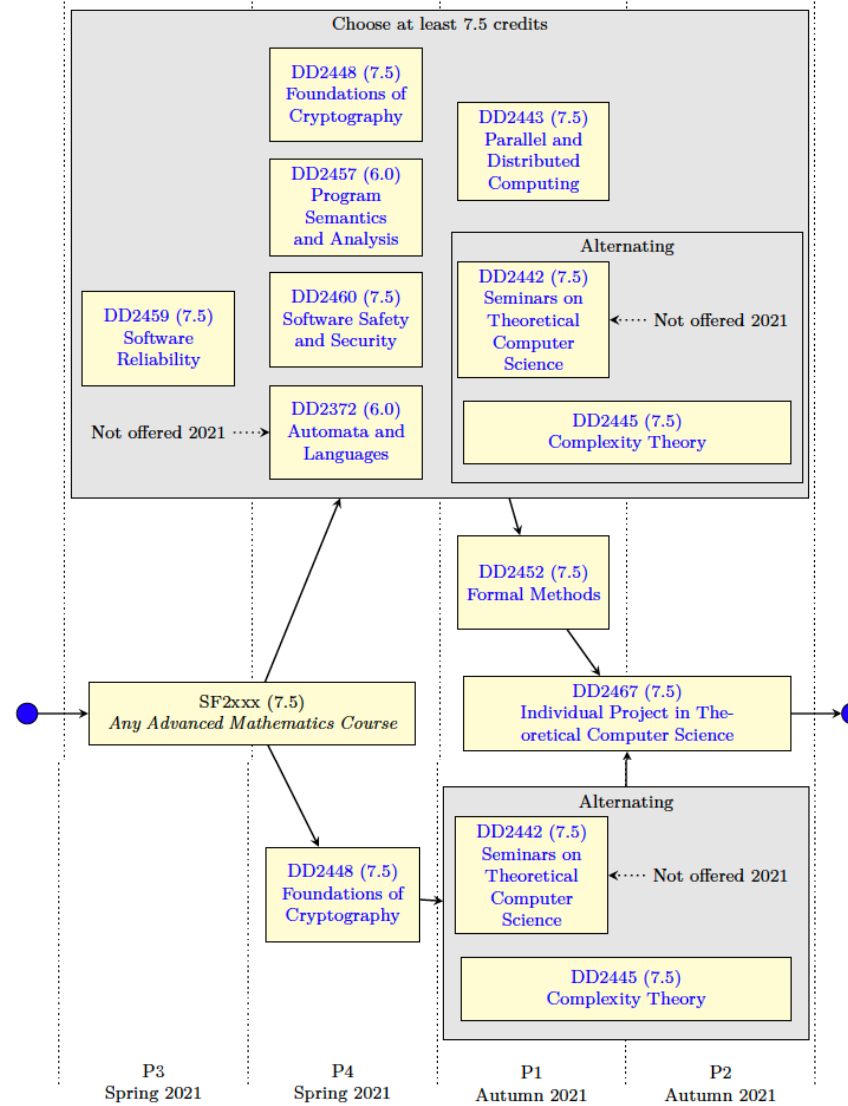


Figure 7: CSTC — Theoretical Computer Science

Track Details

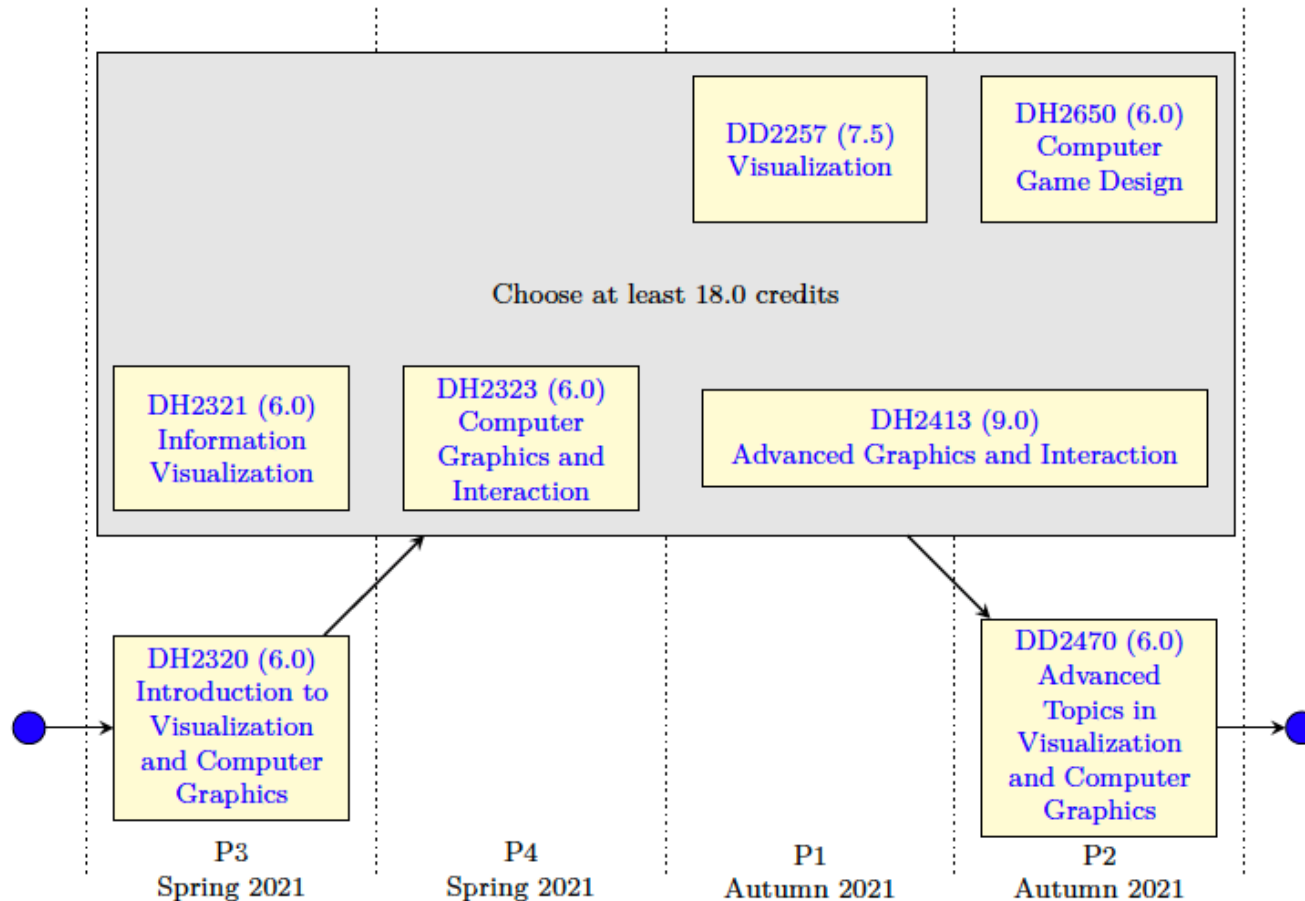
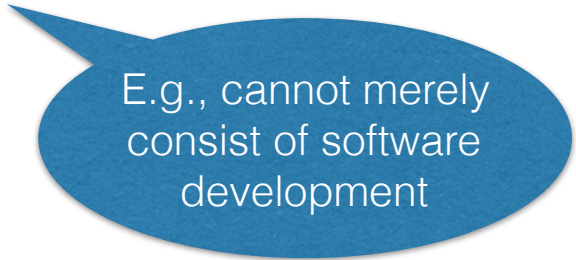


Figure 8: CSVG — Visualization and Interactive Graphics

Master's Thesis

- Essential part of your ***in-depth studies*** in a specialised field
- Think about and ***plan your specialisation track and Master's thesis as an integrated whole***.
- Essential requirement: ***scientific novelty and significance***
- *How to find a good thesis project?*
 - Contact professors and researchers whose research you find particularly interesting
 - Look at the [KTH Degree Project Portal](#)
 - Contact companies, government agencies and organisations
 - Look at opportunities to carry out your thesis project abroad

A blue speech bubble pointing towards the list item "How to find a good thesis project?".

E.g., cannot merely consist of software development

Welcome!

Leverage your opportunities!

Enjoy the journey!

Recommendations

Disclaimer: these are personal recommendations based on my own experience.

- Become skilled at ***time management, use calendars effectively***
 - The number and frequency of assignments can be high (***especially in Autumn, year 1***); without excellent scheduling, the workload can become overwhelming.
- It often pays off to ***start planning early***.
 - Example: to find Master's thesis (starting January 2022), start contacting professors and companies in October/November 2021.
- ***Communicate early***, and don't rely on immediate responses.
 - Example: an exam starts at 14:00. Asking for an explanation of a subject or exercise in an email sent at 10:30 the same morning is too late; it would normally be infeasible for the teacher/assistant to respond before 14:00.