



EDIC - Doctoral Program in Computer
& Communication Sciences

PhD Candidacy Exam Overview

<https://www.epfl.ch/education/phd/programs/edic-computer-and-communication-sciences/>

Candidacy exam ... background

The philosophy

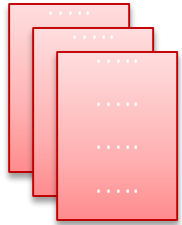
- **After your 1st year of PhD you can**
 - Read, understand and explain technical papers
 - Present them briefly and explain how they influence your work
 - Answer questions about the papers, your write-up and BS/MS background material in the area
- **Exam focused on**
 - Presentation, submitted material + basic background
 - Both depth and breadth
- **What this exam is not**
 - A comprehensive exam for all work in an area
 - Anything the faculty feel “you ought to know”

Evaluation criteria

- Writing skills
- Oral skills
- Breadth of knowledge
- Depth of knowledge
- Ability to interpret results
- Critical thinking and problem solving skills

Candidacy exam ... guidelines

Candidacy exam ... the big picture



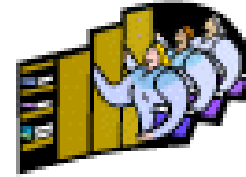
3 background papers



student write-up
incl. references*
(4-8 pages)



90 minute
oral exam



3 (or 4) members
of committee

Exam contents: this +
fundamental background

30 minute (public)
+ 60 minute (private)
& Q&A

Advisor (+ co-advisor if
applicable) + 2 committee
members in related areas

* Student write-up also serves as the EDOC research proposal

Background papers => 3 in total



- **3 papers providing background for your work**
 - Defining the context, general problem, alternative solutions and plans for extension
- **Paper selection guidelines**
 - You select with advisor's input
 - Conference/journal papers, thesis chapters, technical reports
 - No paper with examinee as co-author
 - Two papers maximum with authors from EPFL
 - One paper maximum with a committee member as an author
 - Total length of the 3 papers should not exceed 60 pages

Student's write-up



- **Explain background (3 papers) + your work for committee**
 - 4 to 8 pages
 - To evaluate your writing skills
 - To see how your work is related to the background
- **Format**
 - IEEE conference standards, two-column format to
 - Describe the area
 - Relate solutions in papers to your work
 - Present your own work
 - Must be delivered with a cover page called “research plan” (IS-A)
- **The write-up serves as the “research proposal” requirement for the EPFL Doctoral School (EDOC)**

Write-up ... suggested format



First page




Abstract + Introduction:

Describe briefly the context, the problem, shortcomings in prior approaches, your proposed approach and solution. Forecast results.




In-between pages



Background: Describe the three papers in more detail, the problem they tackle, the solutions and results, and their shortcomings, and how they relate to your work.



Last one or two pages



Your own work + summary and references: Write how you propose to advance the state of the art given the background, what is new technically, how it improves over prior work, and present evaluation. Summarize and list references.



Define your own notation and use it throughout!

The exam day

- **90 minute oral exam**
 - First 30 minutes: public
 - Give a presentation
 - Committee may ask clarification questions
 - Public can ask questions
 - Followed by up to 60 minutes: private
 - Questions from the committee
 - About the write-up, 3 papers, basic background
 - Results announced by the exam president on the same day
- **Scheduled for 2 hours**
 - Exam allowed to stretch a bit
 - Discussion among the committee after the exam



Committee selection process

- **3 (or 4 with a co-advisor)**
 - Your advisor (thesis advisor), and co-advisor if applicable
 - Two members, selected by you and your advisor:
 - The exam president must be selected from the EDIC Jury Presidents
 - The co-examiner/expert must be a professor or MER (senior scientist) at EPFL
- Both must be chosen outside the advisor(s) & the student's lab/unit**



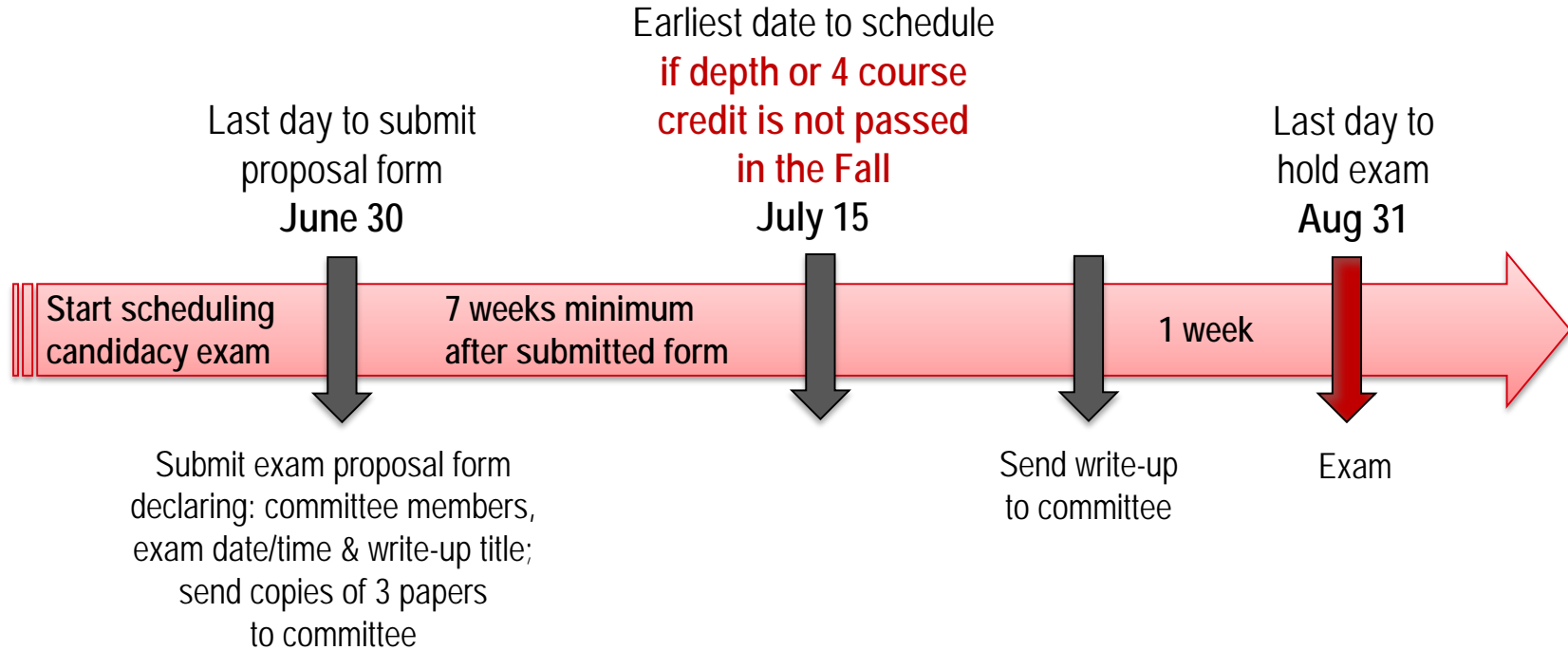
Committee and scheduling date/time

- **Your advisor(s) + 2 faculty in the same or a related area**
 - Committee to read your papers and write-up
 - Listen to your presentation, ask questions
 - Evaluate your write-up, presentation, and answers
- **Your advisor with your input must set date and time**
 - Make sure committee members are available and commit

Candidacy exam proposal form

- Generate the “Candidacy Exam Proposal Form” in IS-A
- Examinee announces exam to EDIC
 - Two months prior to exam day
 - After having selected
 - Committee
 - Date/time/room
 - 3 background papers
 - Write-up title
 - Has to be signed by examinee and advisor(s)
 - Submit to edic@epfl.ch

Scheduling the candidacy exam



NOTE: We strongly recommend to schedule your exam before July to avoid work permit issues

Scheduling the candidacy exam (cont.)

- **Submit proposal form any time**
 - from beginning of spring semester
 - by June 30
 - last day to take the exam: August 31
- **Schedule as early as possible**
 - get faculty to commit to time/day
 - waiting causes scheduling conflicts
 - in case of failure, must pass retake within three months!

Scheduling the candidacy exam (cont.)

- **Haven't passed a depth course yet?**
 - must pass one in the spring (last chance)
 - need a grade of 5
 - no retake
- **Haven't passed min. 4 course credits**
 - must pass one in the spring
- **Must choose an exam date after grades are available**
 - 2019: July 15

Candidacy exam ... retake

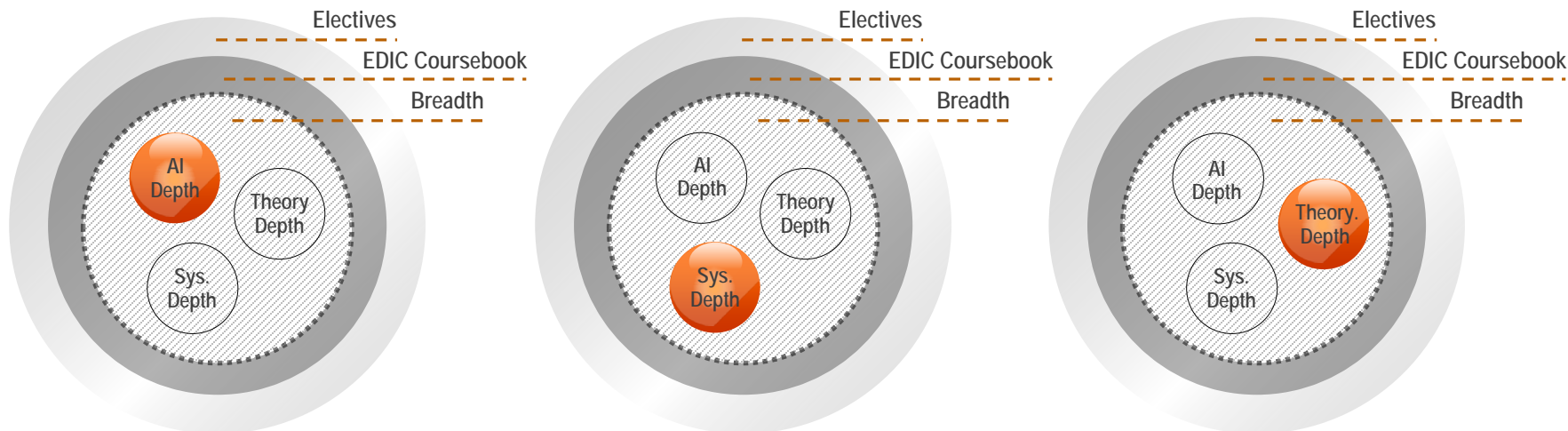
- **The following information can be changed:**
 - Exam president, co-examiner/expert, background papers, write-up
- **Must retake and pass by November 30**
 - Student contract extended up to November 30
- **Advisor financially responsible after August 31**
 - Signing the proposal form indicates commitment to support the student until the end of the retake

Reminder ... EDIC course requirements & credits

Depth and breadth courses

➤ Why?

- Depth: We want our students to be experts in their area
- Breadth: We want our students to know a bit outside their research focus



EDIC depth & breadth requirements

- **Depth (1st year)**
 - Students required to choose a depth area from: AI, Systems, Theory
 - Must pass a depth course **with a grade of 5.0** (*)
 - Must pass the candidacy exam
- **Breadth (over the course of PhD duration)**
 - Once depth area has been chosen, the other 2 areas are considered breadth
 - Must pass one breadth course of min. 4 credits from each of the breadth areas

(*) PhD students with an EPFL MS who have passed a depth course with a grade of 5.0 have fulfilled their depth requirement

FAQs ... Candidacy exam

FAQ – How many times?

- How many chances do I get to pass the candidacy exam?
 - Two
 - If you fail twice, you have to leave the PhD program
- If I fail once, what happens?
 - You must schedule another exam within 3 months

FAQ – Background papers?

- What should I pick for background papers?
 - Consult with your advisor
 - Pick papers that provide a good foundation for your write-up and talk
 - Pick one “basic” paper that is a tutorial or survey of the main ideas in the area, and two papers that are closer to the specific work
 - Pick at least one recent paper

FAQ – Area, research

- Does the candidacy exam have to be in my PhD research area?
 - Yes
 - Your write-up and presentation point to what area and problems you are likely planning to pursue
 - Your actual PhD plan may change over time
 - The exam is on topics where you can demonstrate depth and breadth within the scope of the background papers and write-up

FAQ – Preparation

- Can my advisor(s) help me with my slides and/or the write-up?
 - No
 - Your advisor(s) helps you with the selection of the committee members and the paper choice
 - Your advisor(s) does not correct your slides or write-up before the exam and does not participate in dry runs with you
- Can my EDIC Contact be part of the committee?
 - No

Reminder ... Take your vacation days!

Last but not least ... take your vacation

- Five weeks legal holiday per year
 - Take your vacation days **before** you are transferred to a lab and enter them in the online tool
<http://absences.epfl.ch>

