TU WIEN Informatics

TU Wien Informatics Doctoral School

Information Event
Feb 26, 2025

Andreas Steininger

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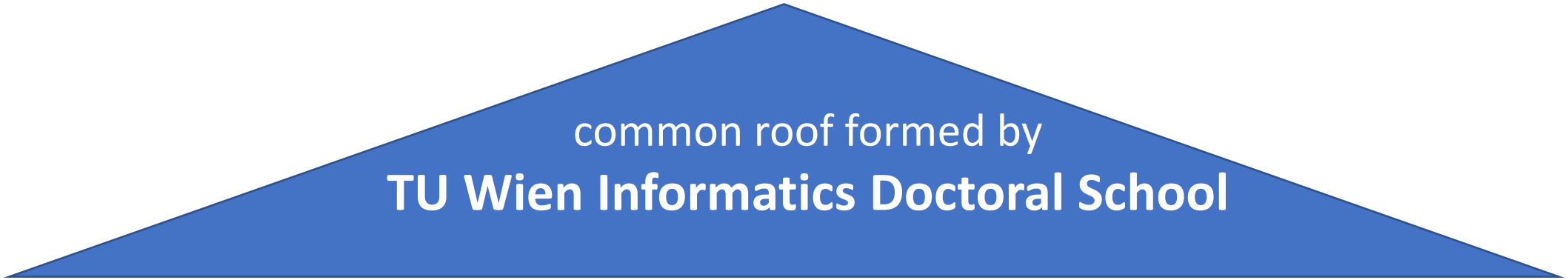
Doctoral Education at our Faculty



different ways of funding a doctoral degree at our faculty

Doctoral Colleges | **Teaching Assistants** | **Research Assistants** | **Self-Funded PhDs** | **…**

different areas, different institutes, different supervisors, …

but the same curriculum, process, evaluation criteria apply to every doctoral student

the Doctoral School is not a secluded club –
every doctoral student is considered member of our Doctoral School

currently ~400

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Excellent Education for Doctoral Students

- ✓ Excellent Supervision
- ➢ Well-thought Dissertation Process
- ➢ Quality Assurance
- ➢ Structured Curriculum
- ➢ Top-class Guest Professors
- ➢ Information & Support of Students
- ➢ Teambuilding & Socializing

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TU Wien Informatics Doctoral School

- **Mission:**
  - ✓ …to provide you with an environment that encourages you to contribute to technology advancement through systematic, yet creative research. Our program enables you to become an independent researcher capable of generating, pursuing, and communicating novel research ideas. To achieve this, you will be involved in research activities as soon as possible.

- **Services** (in tight cooperation with the Deans of Academic Affairs & Dean‘s Office):
  - ✓ maintain unified interface inside and to the outside (webpage, Q&A)
  - ✓ implement the basic curriculum (mandatory lectures)
  - ✓ organize guest lectures (selection, invitation, operation…)
  - ✓ organize special courses in house (Current Trends in CS, Proposal Writing)
  - ✓ stimulate teambuilding (social events)
  - ✓ keep contact to doctoral students, provide aid (relay info, give pointers when problems)
  - ✓ inform (events), coordinate, provide facts & figures

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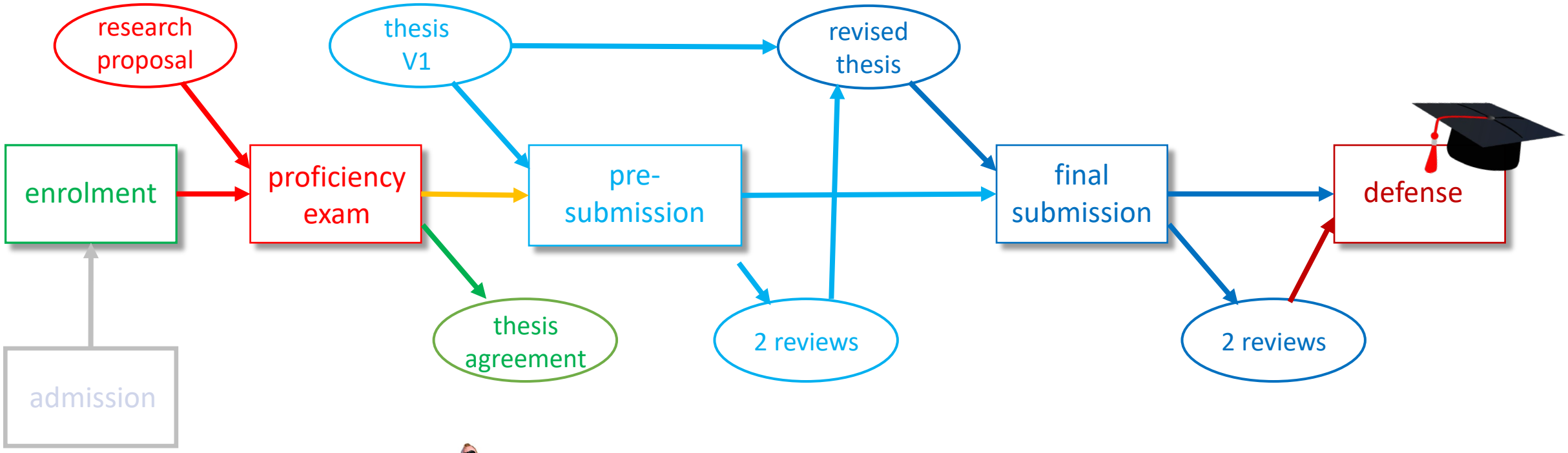
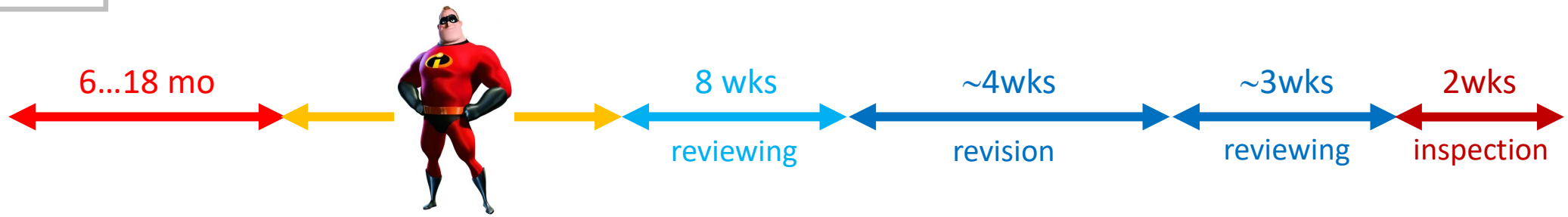
The Path to the Doctoral Degree





Proficiency Exam

research proposal (~10p) & presentation (30’)

- ✓ outline the research challenge you want to address
- ✓ put in context with related work (>10 ref’s)
- ✓ outline envisioned methodology
- ✓ sketch the expected output
- ✓ give a time table including publications
- ✓ present a plan for your 18 ECTS coursework

Is the topic scientifically challenging?

Is the candidate proficient in the field?

Is the methodology appropriate?

Is the thesis doable?

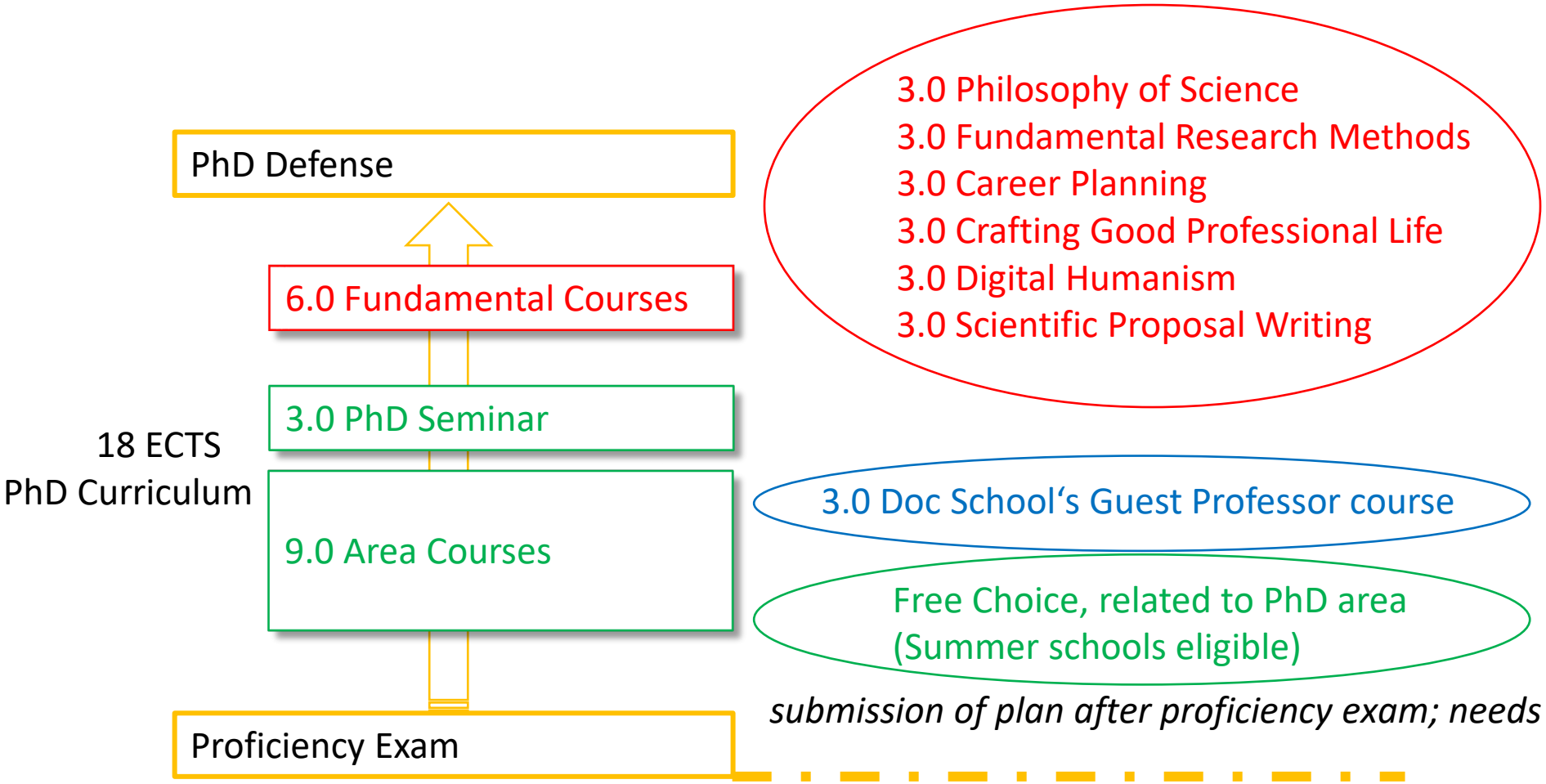
Does the candidate know the relevant venues?

Does the plan align with the rules, does it make sense?

Quality Assurance

- ✓ early feedback & transparency through proficiency exam
- ✓ extra guidance by PE members: National Expert & Chair
- ✓ extra certainty through clear commitments in thesis agreement
- ✓ grading of thesis by 2 independent experts
- ✓ possibility for thesis revision
- ✓ thesis & reviews open for inspection by faculty

Structured Curriculum



Curriculum Structure

As a reminder: In total minimum18 ECTS required

- **fundamental courses**
  - Philosophy of Science (M)
  - Research & Career Planning for Doctoral Students (M)
  - Fundamental Research Methods for Doctoral Students (M)
  - Crafting Good Professional Life
  - Digital Humanism
  - Scientific Proposal Writing

  min 6 ECTS, min 1 methodology

- **area courses**
  - PhD seminar, 3 ECTS
  - visiting professor courses, min 3 ECTS
  - own choice of courses related to research area

  min 12 ECTS, at most 6 ECTS seminar or PV

submission of plan after proficiency exam; need approval!

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Important Sources of Information

- Information of the Dean's Office about Doctoral Study Process
  https://informatics.tuwien.ac.at/study-services/doctoral-graduation/
- Webpage of the TU Wien Informatics Doctoral School
  https://informatics.tuwien.ac.at/doctoral/
- Standard Procedure for Doctoral Program at the Faculty of Informatics
  https://informatics.tuwien.ac.at/doctoral/procedure/
- Registration to Doctoral School news:
  https://inn.tuwien.ac.at/socialevents_doctoralstudents
- Admission Office
  https://www.tuwien.at/en/studies/admission/the-conditions-for-international-students/doctoral-programme/
- TUW DOC School's Mentorship Program
  https://www.tuwien.at/forschung/tuw-doctoral-school/peer2peer-mentorship-program
- Fachschaft Doktorat
  https://fsdr.at/
- TU Wien – Student Support
  https://www.tuwien.at/en/studies/student-support
- Psychosocial Counselling
  https://www.tuwien.at/en/studies/student-support/psychological-counselling-and-mental-health
- Ombuds Office for Academic Affairs
  https://www.tuwien.at/en/studies/student-support/ombuds-office-for-academic-affairs

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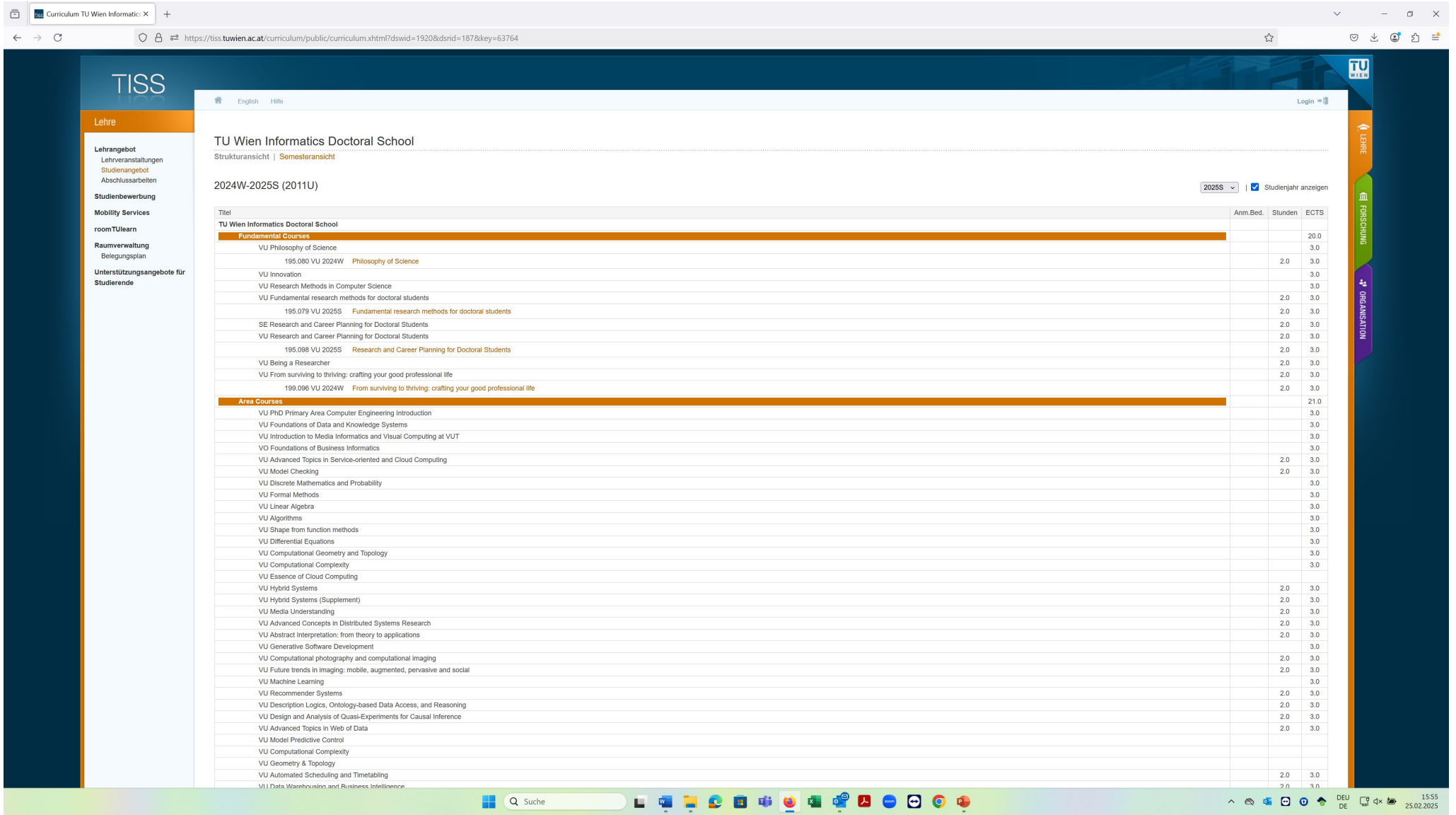
Curriculum TISS



Titel	Anm.Bed.	Stunden	ECTS
TU Wien Informatics Doctoral School			
Fundamental Courses			20.0
VU Philosophy of Science			3.0
195.080 VU 2024W Philosophy of Science		2.0	3.0
VU Innovation			3.0
VU Research Methods in Computer Science			3.0
VU Fundamental research methods for doctoral students		2.0	3.0
195.079 VU 2025S Fundamental research methods for doctoral students		2.0	3.0
SE Research and Career Planning for Doctoral Students		2.0	3.0
VU Research and Career Planning for Doctoral Students		2.0	3.0
195.098 VU 2025S Research and Career Planning for Doctoral Students		2.0	3.0
VU Being a Researcher		2.0	3.0
VU From surviving to thriving: crafting your good professional life		2.0	3.0
199.096 VU 2024W From surviving to thriving: crafting your good professional life		2.0	3.0
Area Courses			21.0
VU PhD Primary Area Computer Engineering Introduction			3.0
VU Foundations of Data and Knowledge Systems			3.0
VU Introduction to Media Informatics and Visual Computing at VUT			3.0
VO Foundations of Business Informatics			3.0
VU Advanced Topics in Service-oriented and Cloud Computing		2.0	3.0
VU Model Checking		2.0	3.0
VU Discrete Mathematics and Probability			3.0
VU Formal Methods			3.0
VU Linear Algebra			3.0
VU Algorithms			3.0
VU Shape from function methods			3.0
VU Differential Equations			3.0
VU Computational Geometry and Topology			3.0
VU Computational Complexity			3.0
VU Essence of Cloud Computing			
VU Hybrid Systems		2.0	3.0
VU Hybrid Systems (Supplement)		2.0	3.0
VU Media Understanding		2.0	3.0
VU Advanced Concepts in Distributed Systems Research		2.0	3.0
VU Abstract Interpretation: from theory to applications		2.0	3.0
VU Generative Software Development			3.0
VU Computational photography and computational imaging		2.0	3.0
VU Future trends in imaging: mobile, augmented, pervasive and social		2.0	3.0
VU Machine Learning			3.0
VU Recommender Systems		2.0	3.0
VU Description Logics, Ontology-based Data Access, and Reasoning		2.0	3.0
VU Design and Analysis of Quasi-Experiments for Causal Inference		2.0	3.0
VU Advanced Topics in Web of Data		2.0	3.0
VU Model Predictive Control			
VU Computational Complexity			
VU Geometry & Topology			
VU Automated Scheduling and Timetabling		2.0	3.0
VU Data Warehousing and Business Intelligence		2.0	3.0

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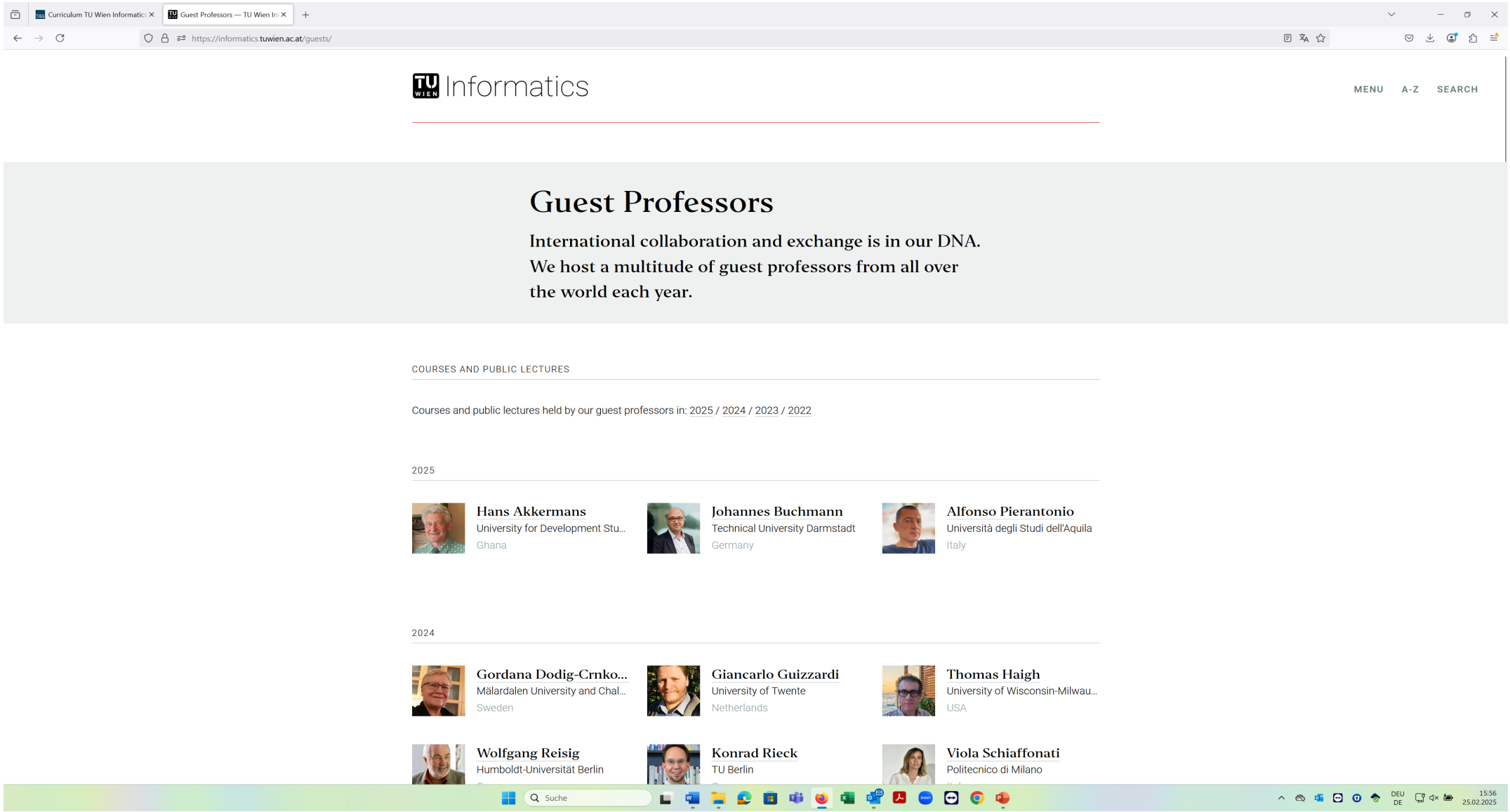
Top-class Guest Professors



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Area Courses by Guest Professors – SS25

- **199.026 ICT4D: Digital Humanism and Global Development**

  Lecturer: Prof. Hans Akkermans and Prof. Anna Bon, VU Amsterdam

  Course start: March 31

- **199.025 Logics for Autonomous Agents and Multi-Agent Systems**

  Lecturer: Prof. Emiliano Lorini, IRIT / University of Toulouse

  Course start: April 3

- **199.022 Introduction to Quantum Algorithms**

  Lecturer: Prof. Johannes Buchmann, TU Darmstadt

  Course start: April 28

all VU 3.0

Area Courses by Guest Professors – SS25

- **199.024 Reasoning about Gossip**
  Lecturer: Prof. Hans van Ditmarsch, IRIT, CNRS, University of Toulouse
  Course start: May 12

- **199.028 High-Assurance Design Methods for Trustworthy Cyber-Physical Systems: A Contract-Based Approach**
  Lecturer: Prof. Pierluigi Nuzzo, University of California, Berkeley
  Course start: May 26

- **199.027 Model-Driven Engineering with Jjodel: A Practical Approach to Language Workbench Design**
  Lecturer: Prof. Alfonso Pierantonio, Università degli Studi dell'Aquila
  Course schedule: second half of June

all VU 3.0

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Fundamental Courses – Summer Term

- **195.079 Fundamental Research Methods for Doctoral Students**

  Introduction to Methodologies and Paradigms

  Formal Methods, Quantitative Methods, Qualitative Methods, Design Methods

  Lecturer: Profs. A. Steininger, U. Egly, C. Huemer, A. Posekany, P. Wozniak

  Course start: March 4

- **195.098 = 184.778 Research and Career Planning for Doctoral Students**

  Lecturer: Prof. Emanuel Sallinger, G. Gottlob, E. Laurenza

  Course start: April 10

- **195.109 ProWriting – Effective Research Proposal Writing for Public Funding**

  Lecturer: S. Biffl, A. Ciabattoni, C. Maszl-Kantner, X.Strobl, A. Steininger

  Course start: March 6 -- submission of proposals before March 3

- **194.178 Digital Humanism for Doctoral Students**

  Lecturer: P. Knees, J. Neidhardt, E. Prem, L. Moravec, M. Lindorfer

  Course start: March 12

all VU 3.0

Current Trends in Computer Science (VU 1.5, 195.072)

- Ring lecture with talks given by the guest professors of the current study year
- offered throughout winter and (following!) summer term
- Most likely we have 6 talks in total during this study year 2024/25 (check TISS & TUWEL)

requirements for positive grade:

- Preferably students attend 4 talks, choose 3 of those for their report and give a summary of at least 2 pages for each.
- For students who can only attend 3 talks this summary must comprise at least 3 pages for each talk.

The course will end after the summer term, a further combination with talks of the winter term 25/26 will not be possible.

Information, Teambuilding, Socializing

- Regular Info Events (process, upcoming guest prof courses, Q&A,...)
- Social Events
  - Special-focus Guided Tours
    („Vienna for students“, „Hidden Secrets of Vienna“, ..
  - Visit & Tour of Ottakringer Beer Brewery
  - Visit of Vienna Museum of History
  - Visit of Christmas Market
  - Curling
  - ...

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You want to receive information about future social events

- please register here:

https://inn.tuwien.ac.at/socialevents_doctoralstudents

Thank you!