UNIVERSITÄT PASSAU

Welcome Meeting for Master‘s Students

Faculty of Computer Science and Mathematics

Monday, 16 October 2023

Introduction

- Prof. Dr. Ignaz Rutter, Dean
- Prof. Dr. Gordon Fraser, Vice Dean
- Prof. Dr. Jens Zumbrägel, Dean of Studies

- Dr. Robert Offinger, Faculty Manager
- Wolfgang Mages, International Coordinator
- International Student Assistants
- FSinfo Student Committee
- Luise Haack, iStudi Coach
- Dr. Ulrike Bunge, Academic Advice Service

Agenda

- German Language Skills
- Study and Examination Regulations:
  - M.Sc. Computer Science
  - M.Sc. Artificial Intelligence Engineering
  - M.Sc. Computational Mathematics
- Course Enrolment and Examinations
- Computer Science & Mathematics Professors
- Support for (International) Master‘s Students
- Questions and Answers

Basic German-Language Skills

If you did not have proof of basic German-language skills when you enrolled in the programme, you are required to complete a **compulsory German course at level A1** (CEFR) at the University of Passau's Language Centre during the first year of study (proof necessary after your second semester, at the latest). Participation in higher-level German-language courses is strongly encouraged!


Master‘s Programme Computer Science

- You can put together your **individual curriculum**
- All offered modules and courses (but compulsory seminar and presentation of master's thesis) are assigned
  - to **one respective focus area** *or*
  - to the "**General Area**"
- The **focus area in which you accumulate the most credits will be your specialization** (cannot be the "General Area")
- **Language restrictions:** some focus areas contain a number of German-taught modules. If you improve your German-language proficiency to an extent that you can follow the courses taught in German (English-language answers are usually accepted in examinations), you will have the full range of choices in this degree programme

Computer Science: Focus Areas

Focus Areas:

1. Information and Communication Systems
2. IT Security and Reliability
3. Intelligent Technical Systems
4. Programming and Software Systems
5. Algorithmics and Mathematical Modeling

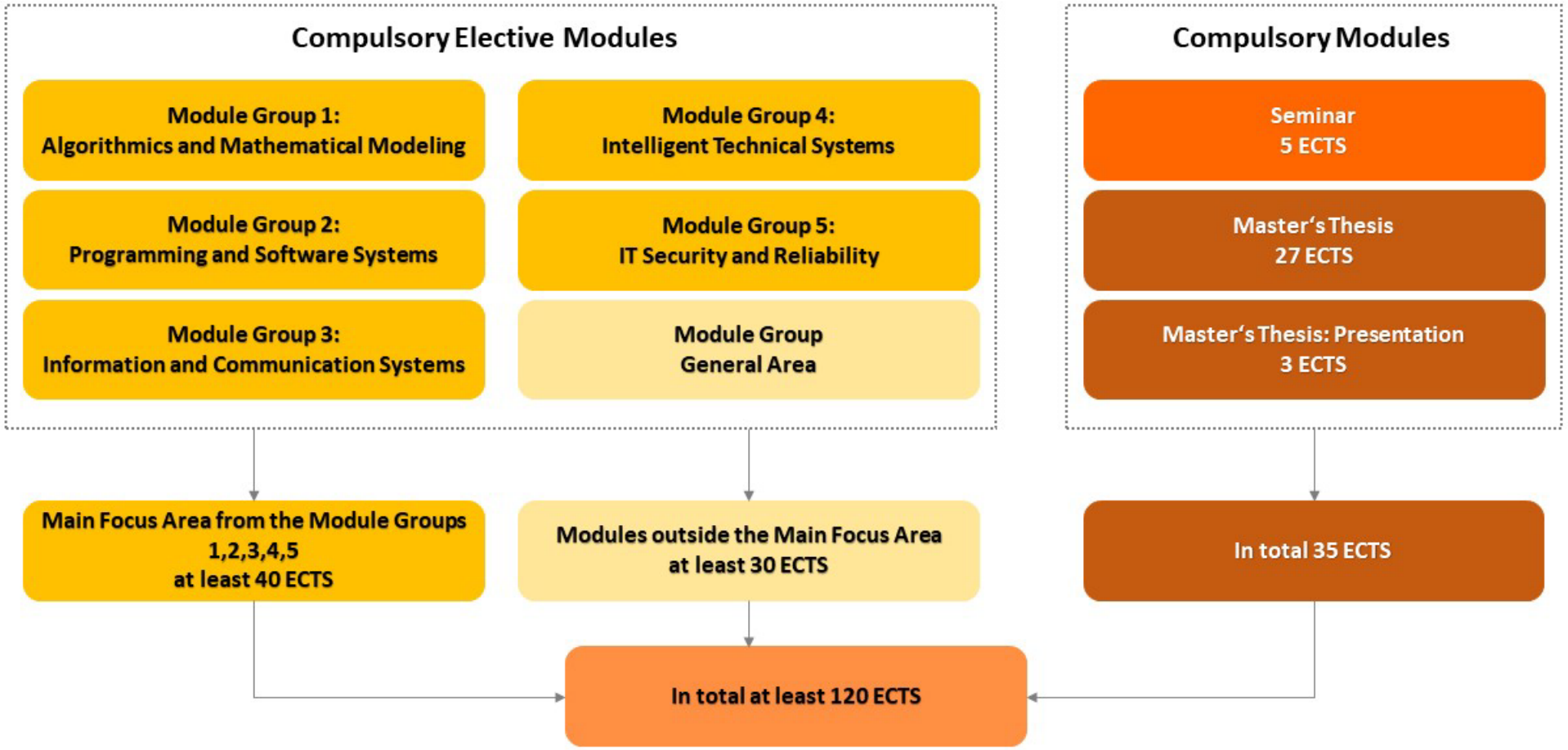
Acceptability of courses for credit transfers:
https://www.fim.uni-passau.de/en/study/acceptability-for-credit-transfers

www.uni-passau.de/en/msc-computer-science (cf. Infosheet)

To obtain the degree, you need to accumulate **120 credits** as follows:

- **30 credits for the thesis**, supervised by a professor (typically in the field of your specialisation, usually at the end of your studies)
- A **minimum of 40 credits from your specialisation** modules (in the chosen focus area)
- A **minimum of 30 credits from modules outside your specialisation** (from other focus areas or from “General Area”)
- One **seminar** (5 credits, typically in the field of your specialisation)
- For the remaining 15 credits, you are **completely free in your choice** of credits (from your specialisation or from any other focus area – including the “General Area” - but only within the programme)
- German-language skills at level A1 (minimum)

Computer Science: Degree Requirements



Note AStuPO § 9 paragraph 3 sentence 1) and 2)

[1] By the end of the first semester, proof of successful completion of module examinations totalling at least 20 ECTS credits must be submitted.

[2] If this requirement is not met, a total of at least 30 ECTS credits must be demonstrated by the end of the second semester at the latest.

- **Seminars**
  - Aim: specialisation on a research topic and preparation for master's thesis
  - Not in the 1st or 2nd semester, recommended in the 3rd semester or later
  - Presentation of seminars offered in the next semester at an event toward the end of every semester (**Stud.IP event 6030** in each corresponding semester)
  - Limited number of participants
  - Max. 3 attempts: 3rd fail ultimately irrecoverable (exmatriculation)

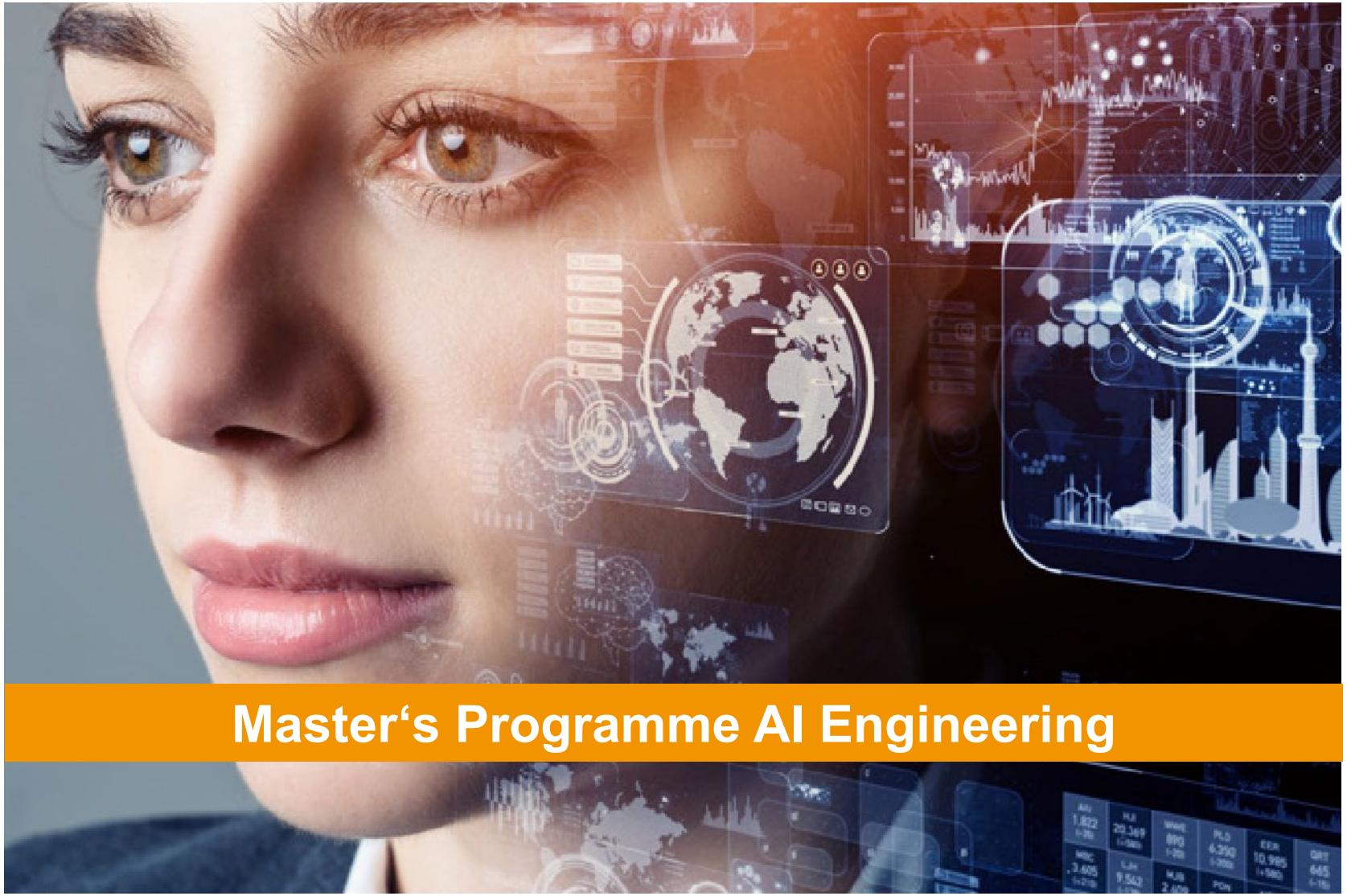
- **Master's Thesis & Presentation**
  - Usually at the end of your studies (at least 40 ECTS required, recommended at least 60-70 ECTS)
  - Typically in the field of your specialisation
  - Look for potential topics on the pages of the chairs and professorships: www.fim.uni-passau.de/en/study/theses
  - Maximum duration of 6 months for the completion of the thesis (from the day of the supervisor's confirmation of acceptance until the due date)
  - Max. 2 attempts: 2nd fail ultimately irrecoverable (exmatriculation)

Examples for Individual Curricula

Sample Curriculum 1, M.Sc. Computer Science	
<u>Specialisation:</u> focus area Information and Communication Systems • Implementation of Database Systems (7 credits) • Text Mining Project (8 credits) • Web of Things and Services (5 credits) • Data Science Lab (6 credits) • Multimedia Databases (7 credits) • Programming Applications for Mobile Interaction (7 credits) **Total: 40 (≥40) credits**	**<u>Outside your specialisation:</u>** **Algorithmics and Mathematical Modelling** • Computational Logic (7 credits) • Computer Algebra (9 credits) **Intelligent Technical Systems** • Control and Robotics (7 credits) **IT Security and Reliability** • Cloud Security (6 credits) • Dependable Distributed Systems (6 credits) • Advanced IT Security (6 credits) **General Area** • Internship (4 credits) **Total: 45 (≥30) credits**
Master seminar: 5 credits	**Thesis: 30 credits**
Overall Total: 120 (≥120) credits	

Examples for Individual Curricula

Sample Curriculum 2, M.Sc. Computer Science	
<u>Specialisation:</u> focus area IT Security and Reliability • System Security (5 credits) • Security Insider Lab I (12 credits) • Wireless Security (5 credits) • Cloud Security (6 credits) • Dependable Distributed Systems (6 credits) • Advanced Security Engineering Lab (12 credits) • Advanced IT Security (6 credits) **Total: 52 (≥40) credits**	**<u>Outside your specialisation:</u>** **Information and Communication Systems** • Web of Things and Services (5 credits) • Foundations of Energy Systems (6 credits) • Network Science (5 credits) • Advanced Topics in Data Science (5 credits) • Multimedia Databases (7 credits) • Safety and Security of Critical Infrastructures (6 credits) **Total: 34 (≥30) credits**
Master seminar: 5 credits	**Thesis: 30 credits**
Overall Total: 121 (≥120) credits	


Master‘s Programme AI Engineering

AI Engineering: Focus Areas

Focus Areas:

1. Algorithmic Engineering und Mathematical Modelling (AEMM)
2. Artificial Intelligence Methods (AIM)
3. Artificial Intelligence Systems Engineering (AISE)
4. Artificial Intelligence Applications (AIA)
5. Cross-Cutting Concerns (CCC)
6. Research Seminars (RS)

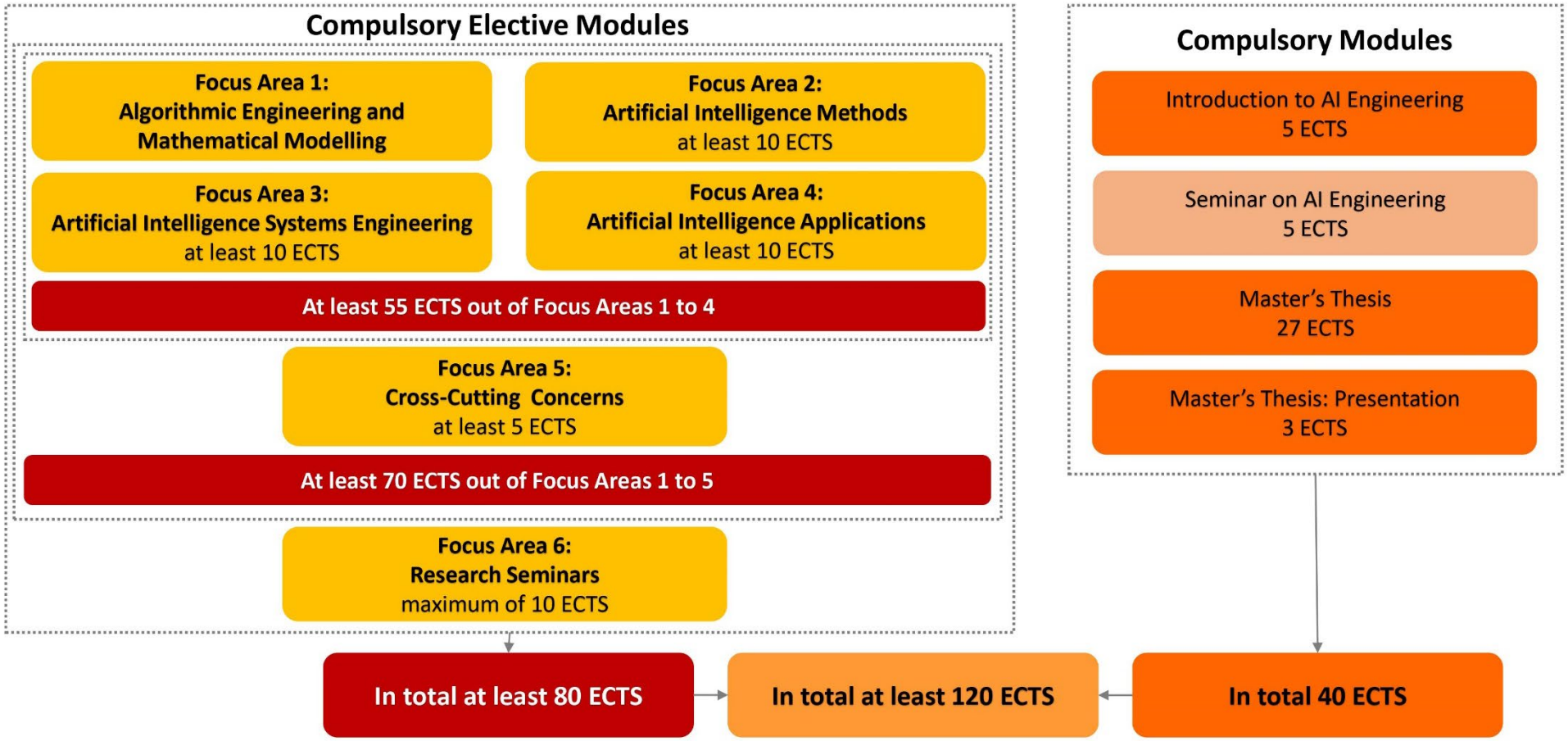
Acceptability of courses for credit transfers:
https://www.fim.uni-passau.de/en/study/acceptability-for-credit-transfers

www.uni-passau.de/en/msc-ai-eng (cf. Infosheet)

To obtain the degree, you need to accumulate **120 credits** as follows:

- **30 credits for the thesis**, supervised by a professor
- **5 credits for the core module "Introduction to AI Engineering"** (to be completed **within your first year of study!**)
- A **minimum of 70 credits from all focus areas except RS**
- A **minimum of 55 credits from the focus areas AEMM, AIM, AISE, AIA and in doing so**
  - A minimum of 10 credits from AIM
  - A minimum of 10 credits from AISE
  - A minimum of 10 credits from AIA
  - A minimum of 5 credits from CCC
- A **maximum of 10 credits from the focus area RS**
- One **compulsory seminar** (not in the first semester)
- **German-language** skills at level A1 (minimum)

AI Engineering: Degree Requirements



Note AStuPO § 9 paragraph 3 sentence 1) and 2)

[1] By the end of the first semester, proof of successful completion of module examinations totaling at least 20 ECTS credits must be submitted.

[2] If this requirement is not met, a total of at least 30 ECTS credits must be demonstrated by the end of the second semester at the latest.

Examples for Individual Curricula

Sample Curriculum 1, M.Sc. AI Engineering

AEMM
- Parameterized Algorithms (5 credits)
- Partial Differential Equations (7 credits)
- Mathematical Logic (9 credits)

Total (AEMM): 21 credits

AIM
- Learning Theory (9 credits)
- Advanced Imaging (6 credits)

Total (AIM): 15 (≥10) credits

AISE
- Scaling Database Systems (6 credits)
- Programming Applications for Mobile Interaction (7 credits)

Total (AISE): 13 (≥10) credits

AIA
- Advanced Topics in Management Science: Planning of Complex Interacting Systems (5 credits)
- Multimedia Databases (7 credits)

Total (AIA): 12 (≥10) credits

CCC
- IT Security Law (5 credits)
- Organizational and Competitive Strategy (5 credits)

Total (CCC): 10 (≥5) credits

RS
- Research Seminar I (5 credits)
- Research Seminar II (5 credits)

Total (RS): 10 (≤10) credits

In total (AEMM, AIM, AISE, AIA): 61 (≥55) credits

In total (AEMM, AIM, AISE, AIA, CCC): 71 (≥70) credits

Master seminar: 5 credits	**Introduction to AIE: 5 credits**
Thesis: 30 credits	**Overall Total: 121 (≥120) credits**

Examples for Individual Curricula

Sample Curriculum 2, M.Sc. AI Engineering

AEMM
- Computational Logic (7 credits)
- Complex Dynamical Networks (5 credits)
- Randomised Algorithms (7 credits)

Total (AEMM): 19 credits

AIM
- Data Science Lab (6 credits)
- Advanced Topics in Data Science (5 credits)
- Applied Artificial Intelligence Lab (6 credits)

Total (AIM): 17 (≥10) credits

AISE
- Advanced IT Security (6 credits)
- Search-Based Software Engineering (5 credits)
- Scaling Database Systems (6 credits)

Total (AISE): 17 (≥10) credits

AIA
- Energy Informatics I (6 credits)
- Computational Statistics – Regression in R (3 credits)
- Econometric Methods (5 credits)

Total (AIA): 14 (≥10) credits

CCC
- Privacy-Preservation Technologies in Information Systems (5 credits)
- Strategy for High-Tech Startups (5 credits)

Total (CCC): 10 (≥5) credits

RS
- Research Seminar I (5 credits)

Total (RS): 5 (≤10) credits

In total (AEMM, AIM, AISE, AIA): 67 (≥55) credits

In total (AEMM, AIM, AISE, AIA, CCC): 77 (≥70) credits

Master seminar: 5 credits	**Introduction to AIE: 5 credits**
Thesis: 30 credits	**Overall Total: 122 (≥120) credits**


Master‘s Programme Computational Mathematics
UNIVERSITÄT PASSAU
Informatik und Mathematik
Hörsäle 11 - 13
Rechenzentrum
33 Innstraße

Computational Mathematics: Focus Areas

Focus Areas:

1. Algebra, Geometry and Cryptography (AGC)
2. Mathematical Logic and Discrete Mathematics (MLDM)
3. Analysis, Numerics and Approximation Theory (ANAT)
4. Dynamical Systems and Optimization (DSO)
5. Stochastics, Statistics (SS)
6. Data Analysis and Data Management and Programming (DADMP)
7. Applications (A)
8. Key Competencies and Language Training (KCLT)

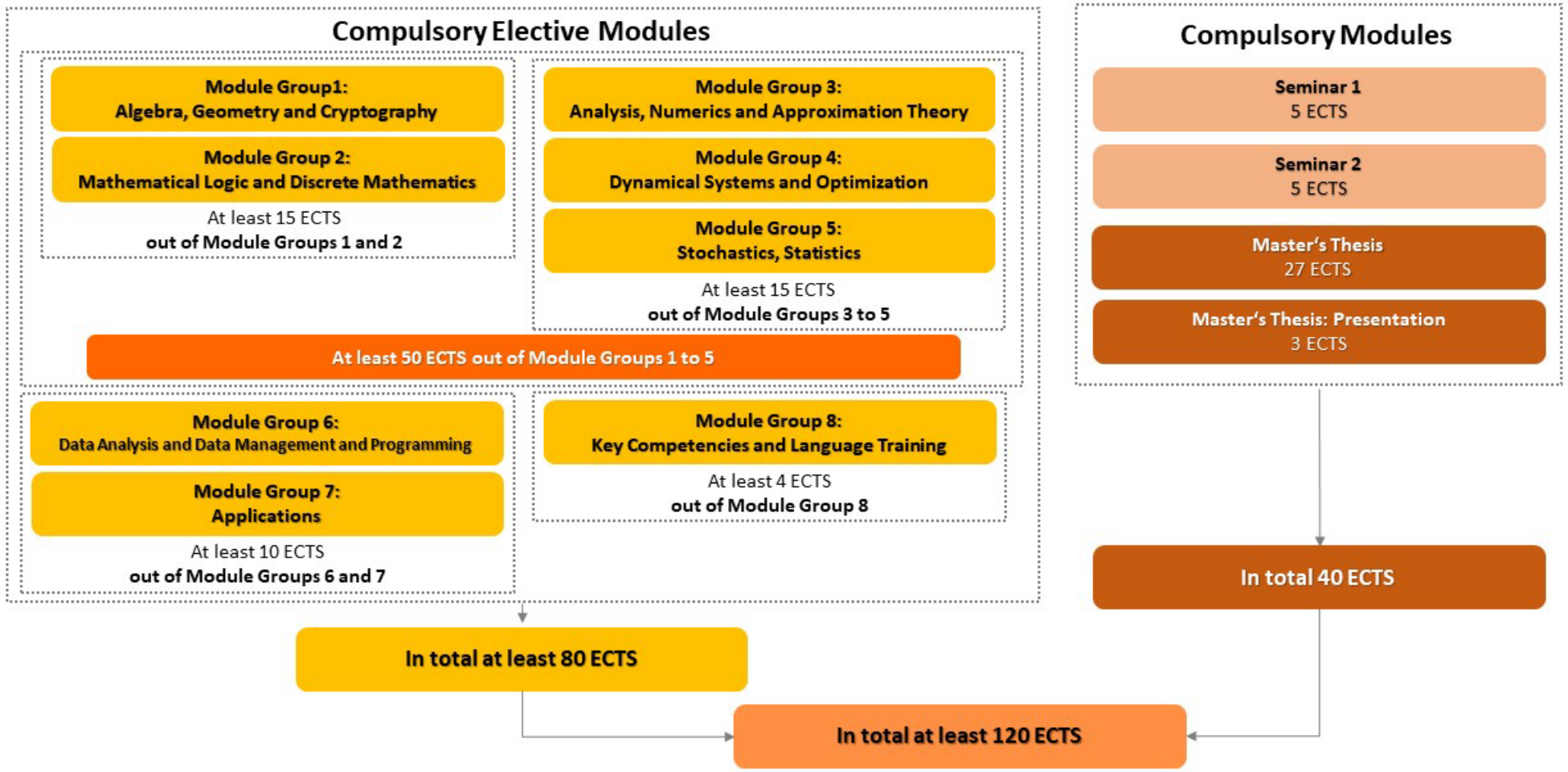
Acceptability of courses for credit transfers:
https://www.fim.uni-passau.de/en/study/acceptability-for-credit-transfers

www.uni-passau.de/en/msc-compmaths (cf. Infosheet)

To obtain the degree, you need to accumulate **120 credits** as follows:

- **30 credits for the thesis**, supervised by a professor
- A **minimum of 50 credits from the focus areas AGC, MLMD, ANAT, DSO, SS and in doing so**
  - A minimum of 15 credits from AGC, MLMD
  - A minimum of 15 credits from ANAT, DSO, SS
- A **minimum of 10 credits from the focus areas DADMP, A**
- A **minimum of 4 credits from the focus area KCLT**
- Two **seminars** (5 credits each, not in the first semester)
- For the remaining 16 credits, you are **completely free** in your choice of courses
- **German-language** skills at level A1 (minimum)

Computational Mathematics: Degree Requirements



Note AStuPO § 9 paragraph 3 sentence 1) and 2)

[1] By the end of the first semester, proof of successful completion of module examinations totalling at least 20 ECTS credits must be submitted.

[2] If this requirement is not met, a total of at least 30 ECTS credits must be demonstrated by the end of the second semester at the latest.

Example for an Individual Curriculum

Sample Curriculum, M.SC. Computational Mathematics	
AGC, MLMD • Cryptanalysis (9 credits) • Cryptography (9 credits) • Mathematical Logic (9 credits) **Total (AGC, MLMD): 27 (≥15) credits** **ANAT, DSO, SS** • Partial Differential Equations (6 credits) • Operator Theory (9 credits) • Functional Analysis (9 credits) • Learning Theory (9 credits) **Total (ANAT, DSO, SS): 33 (≥15) credits** **In total (AGC, MLMD, ANAT, DSO, SS): 60 (≥50) credits**	**DADMP, A** • Visual Analytics (5 credits) • Network Science (5 credits) • Advanced Topics in Data Science (5 credits) **Total: 15 (≥10) credits** **KCLT** • Scientific Methods and Technical Writing (5 credits) **Total: 5 (≥4) credits**
Master seminar 1: 5 credits	**Master seminar 2: 5 credits**
Thesis: 30 credits	**Overall Total: 120 (≥120) credits**

Additional Study Regulations

(applicable in all master's degree programmes)

- Academic progress: requirement to accumulate at least 20 ECTS points after the first semester or 30 ECTS points after the second semester
  - ➢ **Failure to do so will inevitably lead to exmatriculation**

- Plagiarism assessment: declaration of consent with screening of written work (e.g., use of anti-plagiarism software)
  - ➢ Zero tolerance for plagiarism (improper citation of sources/authors and origins of copyrighted material/images etc.) or cheating in examinations

Violations will result in course failure or expulsion from the programme!

Stud.IP

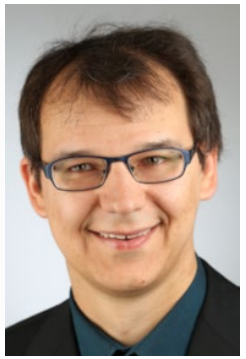
- Sign up only for courses you really intend to take
- Crucial for adequate allocation of resources (suitable lecture halls etc.)
- You should enroll for both lecture (V) and exercise (Ü)

Examinations

- EXA (Campus Portal) examination registration is binding!
- Specific sign-up periods for each faculty, announced each semester by the Examinations Office
- Exceptions in cases of hardship must be reported to the Board of Examiners immediately (**before** examinations)

The Faculty Computer Science

Prof. Dr. Elif Bilge Kavun
Secure Intelligent Systems



Prof. Dr. Florian Lemmerich
Applied Machine Learning

Prof. Dr. Christian Hammer
Software Engineering I

Prof. Dr. Gordon Fraser
Software Engineering II

The Faculty Computer Science

Prof. Dr. Joachim Posegga
IT Security

Prof. Dr. Michael Granitzer
Data Science

Prof. Dr. Stefanie Scherzinger
Scalable Database Systems

Prof. Dr. Dirk Sudholt
Algorithms for Intelligent Systems

The Faculty Computer Science

Prof. Dr. Hermann de Meer

Computer Networks & Communication

Prof. Dr. Matthias Kranz

Embedded Systems

Prof. Dr. Stefan Katzenbeisser

Computer Engineering

Prof. Dr. Ignaz Rutter

Theoretical Computer Science

The Faculty Computer Science

Prof. Dr. Annette Hautli-Janisz
Computational Rhetoric and Natural Language Processing

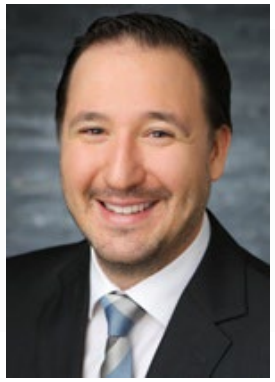
Prof. Dr. Harald Kosch
Distributed Information Systems

Prof. Dr. Christoph Heinzl
Cognitive Sensor Systems

Prof. Dr. Steffen Herbold
AI Engineering

UNIVERSITÄT PASSAU

Stand-In Professors
Computer Science



Prof. Dr. Tolga Arul
Reliable Distributed Systems

Prof. Dr. Alsayed Algergawy
Data and Knowledge Engineering

The Faculty Mathematics

Prof. Dr. Matthias Brandl
Didactics of Mathematics

Prof. Dr. Fabian Wirth
Dynamical Systems

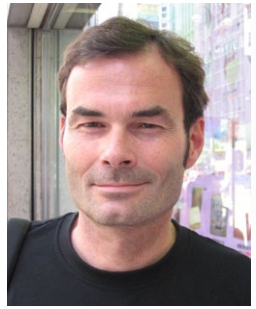
Prof. Dr. Tomas Sauer
Digital Image Processing

Prof. Dr. Tobias Kaiser
Pure Mathematics

The Faculty Mathematics

Prof. Dr. Brigitte Forster-Heinlein
Applied Mathematics

Prof. Dr. Thomas Müller-Gronbach
Stochastics and Its Applications

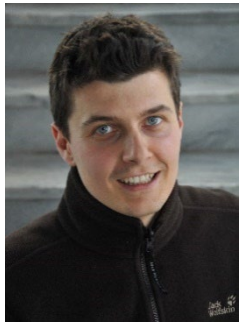


Prof. Dr. Martin Kreuzer
Symbolic Computation

Prof. Dr. Jens Zumbrägel
Cryptography

The Faculty Mathematics

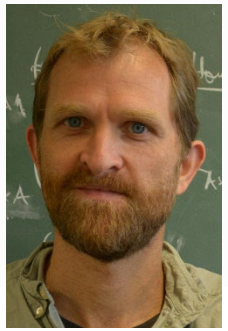
Prof. Dr. Joscha Prochno
Functional Analysis



Prof. Dr. Daniel Rudolf
Mathematical Data Science

Prof. Dr. Stefan Glock
Discrete Mathematics

The Faculty Mathematics



Prof. Dr. Tobias Harks
Mathematical Optimisation

Prof. Dr. Moritz Müller
Mathematical Logic

Support for International Master‘s Students

International Coordinator

Wolfgang Mages

Room 239, IT-Zentrum (International House)
Phone: +49 851 - 509 3066
E-Mail: masters@fim.uni-passau.de

International Student Assistants

Jule & Ashish

E-Mail: master-help@fim.uni-passau.de

International Student Assistants

Personal Office Hours, SR (ITZ) 003:

Wednesday, 18 October 2023, 12 o‘clock noon

Wednesday, 25 October 2023, 12 o‘clock noon

Latecomer Crash Course, SR (ITZ) 003:

Monday, 6 November 2023, 4 p.m.

Late Arrival Day (6 November 2023) Registration:
https://www.uni-passau.de/en/orientation/help-ill-miss-the-orientation-weeks

FSinfo

Faculty's Student Committee (FSinfo)

We support you in your studies, represent you in university committees, collect and provide old exams, and keep you informed about important dates and deadlines.

Contact

FS info
Fachschaft für Informatik und Mathematik

UNIVERSITÄT PASSAU

Please don't hesitate to approach us in case you face any problems or open questions regarding your studies!☺

Office: IM 244

Phone: 0851/509-3004

Mail: `fsinfo@uni-passau.de`

Homepage: `https://fsinfo.uni-passau.de`

Chat: `https://fsinfo.uni-passau.de/chat`

fsinfopassau

iStudi Coach: your central contact person for non-academic questions

We provide international degree-seeking students with:

- Individual orientation: whom to ask?
- Network of partners inside and outside the University
- Career coaching and application checks
- Career Orientation Programme: iStudi Pass
- Trainings and workshops on study organisation, intercultural communication and job application skills

Contact details:
Luise Haack
iStudi Coach
Tel.:+49 (0)851 509-1173
Administration Building, VW 106
Drop-in Wednesday mornings
(access info and slots on L. Haack's Stud.IP profile page)
istudicoach@uni-passau.de
www.uni-passau.de/en/iStudi

iStudi Pass: how does it work?

- ✓ Register online and select events: www.uni-passau.de/en/istudi/pass
- ✓ We add you to a Stud.IP group (updates, events)
- ✓ Each semester, select your individual activities from our suggestions to complete six modules:
  - Job seeking and applications
  - Company networking
  - Intercultural skills
  - German language skills
  - Degree success*
  - Volunteering*
- ✓ Receive a certificate to showcase that you are ready to enter the German job market.

Academic Advice Service/ Studienberatung

We can help you in individual consultations, e.g. with:

- General questions and any problems arising during your degree programme, e.g. if you notice that you will probably not reach the 30 ECTS points you need after the 2nd semester
- Questions about organising your degree programme
- Help if you're stuck making a decision

We are independent, do not give grades and our service is free of charge.

www.uni-passau.de/en/academic-advice

Academic Adjustments / Nachteilsausgleich

Academic adjustments are special dispensations that **compensate for disadvantages brought about by a candidate's disability or chronic or mental illness**

- Extension of deadlines
- Extra time for oral and written examinations, deadline extensions for term papers, theses and dissertations
- Change of exam type: oral exam instead of written exam or vice versa; individual examination instead of group examination

www.uni-passau.de/en/disability-support/academic-adjustments

Contact persons at the University of Passau

- **Academic Advice Service**

www.uni-passau.de/en/academic-advice

- **Student Disabilities Officer**

  Dr. Ulrike Bunge

www.uni-passau.de/en/disability-support/

- **Psychological-Psychotherapeutic Counselling Centre**

  Dr. Lisa Huber-Flammersfeld and Maria Zessin

www.uni-passau.de/en/psychological-counselling

Administration building, Innstraße 41, 1st floor left

FIM Technical Support

General overview of FIM IT services:
https://www.fim.uni-passau.de/en/it-services/

First Steps - A guide to using the FIM IT services for beginners:
https://www.fim.uni-passau.de/en/it-services/login-and-account/first-steps/

Create a FIM account to get access to the FIM IT services (for instance FIM lab PCs):
https://www.fim.uni-passau.de/en/it-services/login-and-account/fim-accounts/


Thank You for Your Attention!
Any Questions?