

**Explore Your Master 2017:
Master Electrical
Engineering**

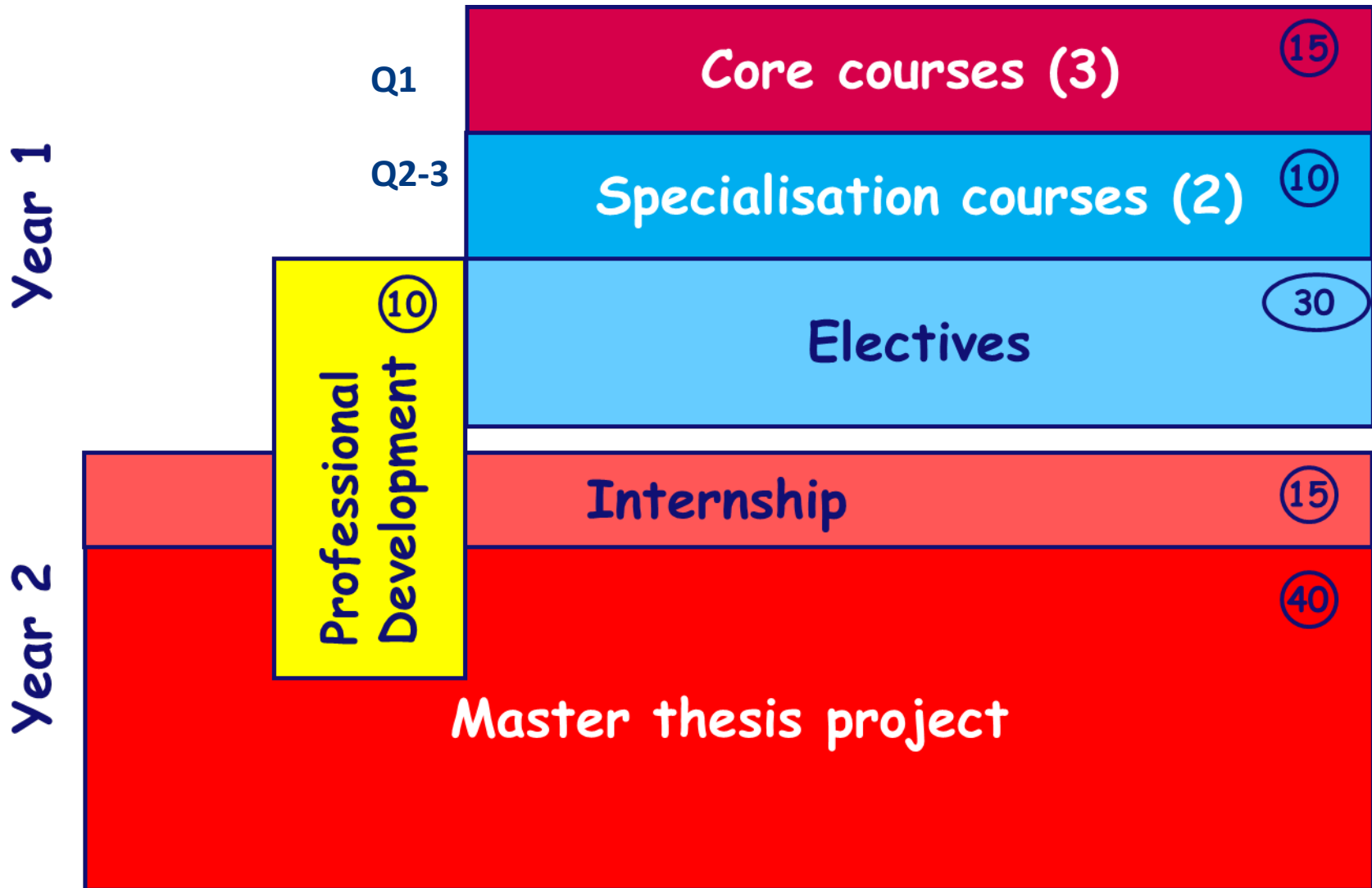
1 May 2017

Harald van den Meerendonk

Contents

- Master program
- Special Master's tracks
- Mentoring
- Approval form study package
- Digital Study Guide

Master Electrical Engineering 120 EC



- Three core courses from set of eight
- Free choice
- Research groups advise preferences

Code	Name	Q
2DME30	Complex Analysis	Q1
5CCA0	Semiconductor Physics and Materials	Q1
2DME10	Discrete Mathematics	Q1
5CHA0	Classical and Modern Physics	Q1
5CPA0	Numerical Methods for Electrical Engineers	Q1
2DME20	Nonlinear Optimization	Q1
5CRA0	Fundamental Aspects of Random Signals and Processes	Q1
5CSA0	Modeling Dynamics	Q1

Abbreviation	Research group
ECO	Electro-optic Communication Systems
PHI	Photonic Integration
MsM	Mixed-signal-Microelectronics
SPS	Signal Processing Systems
ES	Electronic Systems
EES	Electrical Energy Systems
EPE	Electromechanics and Power Electronics
EM	Electromagnetism
CS	Control Systems

	Complex Analysis (2DME30)	Discrete Mathematics (2DME10)	Non-linear Optimization (2DME20)	Semiconductor physics and materials (5CCA0)	Fundamental aspects of random signals (5CRA0)	Classical and Modern Physics (5CHA0)	Numerical Methods for Electrical Engineers (5CPA0)	Modeling Dynamics (5CSA0)
CS	◆		◆		✓		✓	◆
ECO	◆			◆	◆	✓	✓	✓
PHI				◆	◆	✓		
EES	✓		✓	◆	◆	◆	✓	◆
EPE	✓		✓	✓	✓	✓	✓	✓
EM	◆		✓	◆		◆	◆	
ES		◆	✓	✓	✓		✓	✓
MsM				◆	◆	✓	◆	✓
SPS	✓		◆		◆		✓	✓

◆ = Important

✓ = Preferred

- Two specialisation courses from research groups in Q2 and Q3

Path	Code	Name	Q
CS	5SMA0	Model-based Control	Q2
	5SMB0	System Identification	Q3
ECO	5SHA0	Photonic Integrated Devices	Q2
	5STA0	Optical Fibre Communications Technology	Q3
EES-1	5SEC0	Planning and Operation of Power Systems	Q2
	5SEB0	Decentral Power Generation and Active Networks	Q2
EES-2	5SVA0	High Voltage Technology	Q2
	5SVB0	Electromagnetic Compatibility	Q3

Path	Code	Name	Q
EM-1	5SPA0	Advanced Electromagnetics and Moments Methods	Q2
	5SPB0	Microwave Engineering and Antennas	Q3
EM-2	5SPA0	Advanced Electromagnetics and Moments Methods	Q2
	5SPC0	Wavefield Representations	Q3
EPE-1	5SWA0	Design of Electrical Machines	Q2
	5SWB0	Design and Realization of Power Converters	Q3
EPE-2	5SWC0	Linear and Planar Motors for High-Precision Systems	Q2
	5SWB0	Design and Realization of Power Converters	Q3

Path	Code	Name	Q
ES	5SIA0	Embedded Computer Architecture	Q2
	5SIB0	Electronic Design Automation	Q3
MsM-1	5SFA0	Data Converters 1: Fundamentals	Q2
	5SFD0	Data Converters 2: Design	Q3
MsM-2	5SFB0	RF Transceivers 1: Fundamentals	Q2
	5SFE0	RF Transceivers 2: Design	Q3
PHI	5SHA0	Photonic Integrated Devices	Q2
	5SHB0	Photonic Integration: Technology and Characterization	Q3
SPS	5XSB0	Signal Analysis and Estimation	Q2
	5SSB0	Adaptive Information Processing	Q3

- Choose a total of six courses (30 ECTS)
- Choose from about 60 EE-courses, other TU/e-master courses, **3rd level** (Advanced) bachelor courses or courses from other universities
- Need partial approval of graduation supervisor for 15 ECTS (3 courses), other 15 ECTS are free of choice
- See the [Digital Study Guide](#) for an overview of all electives

Main targets:

- Project leadership, coaching and planning
- Working with cultural diversity
- Writing, presenting, doing research

Code	Name	ECTS	Q
5CKB0	Project management	2,5	Q2, Q4
5CKC0	Academic Writing	2,5	Y1Q1
5CKD0	Presenting scientific information and research set-up	2,5	Y2Q1
5CKE0	Intercultural Communication, Cooperation & Integration	2,5	Q2, Q4

- Individual project of 15 ECTS. Extend with 5 ECTS (instead of an elective)
- Project contributes to the research of the supervising research group
- Can be done inside and outside the university, preferably abroad to obtain international experience
- Always under the responsibility of EE staff member
- Fill in the internship contract before starting (download from the [Digital Study Guide](#))

- Individual project of 40 ECTS
- Project contributes to the research of the supervising research group
- Can be done inside and outside the university
- Always under the responsibility of EE staff member

- Allowed to start graduation when master program is completed except for **at most** two electives
- Fill in the graduation contract before starting (ask Student Administration)
- Progress reported through a half way presentation, a final presentation/ defense and graduation paper
- Assessment by panel

Two tracks:

- Broadband Telecommunication Technologies (BTT)
- Care & Cure (C&C) with subtracks:
 - Neurology
 - Oncology
 - Cardiology
 - Perinatology

Requirements for certificate:

- Core & specialisation courses from specific group
- Two other specialisation courses from related groups
- Graduation work in area, with supervisor from group

Special Master's Track	Groups
Broadband Telecommunication Technologies	ECO, PHI, EM
Care & Cure	SPS, MsM, EM

Requirements for subcertificate C&C:

- Meet the criteria for the C&C Certificate
- Choose three master electives from a specific C&C subtrack (see the [Digital Study Guide](#))

Mentor helps in

- Making choices of specialized electives
- Composing the rest of curriculum/Personal Development Plan (PDP)
- Meets and discuss the results of the Professional Skills diagnostic tests (OER 3.4.3) and PDP

Mentor list

Group	Mentor
ECO	Oded Raz
PHI	Erwin Bente
MsM	Marion Matters
SPS	Chiara Rabotti
ES	Marc Geilen
EES	Nikos Paterakis
EPE	Kirill Rykov
EM	Bas de Hon
CS	Siep Weiland

Approval form study package

- Form available at [Digital Study Guide](#)
- Diagnostic tests completed?:
 - A Broad Test on Skills (SKL00)
 - In-depth Test on Teamwork Skills (SKL10)
 - In-depth Test on Presentation Skills (SKL20)
 - In-depth Test on Academic Writing Skills (SKL30)
- Personal Development Plan discussed with mentor?
- Code of Scientific Conduct signed?
- Specialisation path chosen?
- Return filled-in form at the end of Q1

Digital Study Guide

All information regarding the curriculum can be found at the Digital Study Guide:

<https://educationguide.tue.nl/programs/graduate-school/masters-programs/electrical-engineering/>