

Afternoon Information Sessions about Master's Thesis Topics INTEC - 21 and 23 April 2015 -

**Master of Science in Electrical Engineering
Master of Science in Computer Science Engineering
Master of Science in Biomedical Engineering
Master of Science in Engineering Physics
Master of Science in Photonics Engineering**

On Tuesday, 21 April and Thursday 23 April 2015 the research groups of the Information Technology Department (INTEC) will present their master's thesis topics. This document lists the time slots and locations of these information sessions for all groups. You can register via a web application (see link in the email). Pay attention to the location as the department is housed at three different locations: Technicum, Zuiderpoort, and Ardoyen Campus.

We think it is very important that all students are well informed about the master's thesis topics. Indeed, the master's thesis is an important part of your educational programme. Of course, it is also possible to schedule an appointment with the thesis promoters or supervisors at another time.

On behalf of the Department of Information Technology

Prof. Eric Laermans

Information from the various INTEC research groups

Acoustics research group

When and what?

Tuesday 21 April at 14h and 16h – Thursday 23 April at 14h and 16h

Presentation of master's theses about:

- human hearing, measurement and prevention of hearing loss, biomonitoring
- human brain response analysis and stimulation
- computational intelligence and data mining of large data sets
- techniques for measuring and reproducing audio and microphone arrays
- sensors and sensor networks for noise and air quality
- physical modeling of sound propagation and atmospheric effects
- urban soundscape and the environmental noise issue and legislation

Suitable for computer science, electrical engineering, applied physics, biomedical, electromechanical engineering, architecture, civil engineering, urban design and architecture, etc. Depending on the interest of the students present equipment that is relevant to the issues involved will be demonstrated.

Promoters for these topics are: Prof. Dick Botteldooren, Prof. Timothy Van Renterghem, Prof. Bert De Coensel

Where?

Technicum, blok 3, floor -T, office 1.09B

Electromagnetics research group

When and what?

Tuesday 21 April and Thursday 23 April at 14h, 15h, 16h, and 17h

Interactive presentation of the master's theses about:

- antennas and radio wave propagation
- electromagnetic compatibility (EMC) and signal integrity (SI) aware design
- computational electromagnetism

This can, if students desire, be linked to a demo of the near field measurements scanning system and of the anechoic chamber for antenna and EMC/SI far field measurements. The thesis promoters and supervisors are available to provide informally and on an individual basis additional information about their research and the associated theses.

Promoters for these topics are: Prof. Daniël De Zutter, Prof. Hendrik Rogier, Prof. Dries Vande Ginste

Where?

Technicum, blok 3, floor -T, office 1.12B

Photonics research group and Center for Nano- and Biophotonics (NB Photonics)

When and what?

Tuesday 21 April and Thursday 23 April at 14h and at 16h

Presentations of master's theses in photonics research. The global vision and orientations of research on optical chips and their applications in telecommunications, biotechnology, and medical sensors are explained. After this, specific topics are discussed and there is an opportunity to contact the thesis supervisor.

Promoters for these topics are: Prof. Roel Baets, Prof. Peter Bienstman, Prof. Wim Bogaerts, Prof. Nicolas Le Thomas, Prof. Geert Morthier, Prof. Gunther Roelkens, and Prof. Dries Van Thourhout

Where?

Technicum, blok 2, floor+1, meeting room Van Bladel (INTEC)

INTEC design research group

When and what?

Tuesday 21 April and Thursday 23 April continuously from 14h to 17h

1/ Explanations about master's theses: Design of fast electronics for wireless, wired, and optical communications and measurement systems.

- Design and characterization of a 60GHz wireless communication link (in cooperation with Prof. Vande Ginste)
- 56Gb/s transceiver optimization for electronic interconnects
- Development of a wavelength modulation spectroscopy system (in cooperation with Prof. Roelkens)
- Multi-Gb/s Electronic Dispersion Compensation for Long-Reach Passive Optical Networks (in cooperation with Prof. Moeneclaey)

- Polarization Control for Satellite Interactive Terminals (in cooperation with Prof. Rogier and Newtec)
- Radio-over-fiber: transceiver electronics design, modulation, demodulation and experimental characterization (in cooperation with Prof. Steendam)

2/ Demonstration of recent design activities: chip design, PCB design, and signal processing on FPGA are well represented, e.g. chip design for 10 gigabits per second fiber-to-the-home, design of optical multichannel 25 and 40 gigabits per second transmitter and receiver chips, the design of ultra-fast electronic interconnections at 80Gb/s, design of 30GHz power amplifiers, design of millimeter wave PCBs and fast real-time digital signal processing on chip and FPGA.

Promoters: Prof. Johan Bauwelinck, Prof. Xin Yin, and Dr. Guy Torfs

Where?

Technicum, blok 1, floor+2

IBCN research group – Mobile and wireless networks

When and what?

Tuesday 21 April at 15h and 17h – Thursday 23 April at 14h and 16h

Explanations about master's theses concerning:

- wireless sensor networks – Internet of Things
- smarter and robust wireless networks
- new generation access networks (Long Term Evolution – LTE)
- wireless localization systems
- experimenting in a heterogeneous wireless test environment

Promoters for these topics are: Prof. Ingrid Moerman, Prof. Jeroen Hoebeke

Where?

Zuiderpoort, meeting point at floor 2

IBCN research group – Future Internet Design

When and what?

Tuesday 21 April at 15h and 17h – Thursday 23 April at 14h and 16h

Explanations about master's theses concerning:

- green ICT
- IP-over-optical networks
- techno-economics
- network algorithms

Promoters for these topics are: Prof. Mario Pickavet, Prof. Didier Colle, Prof. Sofie Verbrugge

Where?

Zuiderpoort, meeting point at floor 2

IBCN research group – Software and Services

When and what?

Tuesday 21 April at 14h and 16h – Thursday 23 April at 15h and 17h

Explanations about master's theses concerning:

- autonomic computing and network management, thin client
- smart environments (home and city), e-health
- cloud computing, content management

Promoters for these topics are: Prof. Bart Dhoedt, Prof. Filip De Turck, Prof. Pieter Simoons, Prof. Frank Gielen

Where?

Zuiderpoort, meeting point at floor 2

IBCN research group – Bio-informatics and Machine Learning, Information Retrieval

When and what?

Tuesday 21 April at 15h and 17h – Thursday 23 April at 14h and 16h

Promoters for these topics are: Prof. Jan Fostier, Prof. Kathleen Marchal, Prof. Tom Dhaene, Prof. Eric Laermans, Prof. Chris Develder

Where?

Zuiderpoort, meeting point at floor 2

Wireless & Cable research group

When and what?

Tuesday 21 April and Thursday 23 April telkens at 13u, 14h, 15h, and 16h

Explanations about the master's theses in the field of recommender systems, personalization, human-computer interaction, context-aware applications, and big data.

Promoter for these topics is: Prof. Luc Martens

Where?

Zuiderpoort, meeting point at floor 2

When and what?

Tuesday 21 April and Thursday 23 April telkens at 13u, 14h, 15h, and 16h

Explanations about the master's theses in the field of electromagnetism, electromagnetic field exposure, medical applications, green ICT, wireless network communication and propagation, wireless body area networks, and wireless network performance.

Promoters for these topics are: Prof. Wout Joseph, Prof. Luc Martens

Where?

Zuiderpoort, meeting point at floor 2
