Table of Contents

1. Introduction

2. Goals of the program

3. Contact information secretariat, ombudsperson, teaching staff

4. The Artificial Intelligence (AI) program
   - ECS: Engineering and Computer Science option
   - SLT: Speech and Language Technology option
   - BDA: Big Data Analytics option

5. Self-test for ECS and BDA students

6. Examinations

7. Facilities (classrooms, computer facilities, library)

8. Appendices:
   - Timetable (preliminary)
   - Plan of the campus
   - Thesis form
   - Thesis evaluation guidelines

Important upcoming deadlines:

Oct 11, 2017: deadline enrolment
Oct 11, 2017: complete your choice of Individual Study Program (ISP) in Toledo
Oct 31, 2017: return signed form for your thesis to the MAI secretariat
1. INTRODUCTION

Welcome to the Master of Artificial Intelligence (MAI) program of the KU Leuven.

With this handout we want to give you some practical information about the Artificial Intelligence program.

The most urgent thing to do at the beginning of the academic year is to register as soon as possible at the Naamsestraat 22 in Leuven (deadline October 11).

All notices will appear on the MAI webpage:


You are supposed to regularly consult the e-bulletin board for all practical information throughout the academic year of your studies.

2. GOALS OF THE PROGRAM

The AI program aims at instructing and training students on state of the art knowledge and techniques in Artificial Intelligence, with specific focus either on Engineering and Computer Science technology (ECS) or on Speech and Language Technology (SLT), depending on the selected option within the program. It aims at introducing the students to the concepts, methods and tools in the field. It aims at instructing students on the achievements in a number of advanced application areas and make them familiar with their current research directions. It aims to bring students to a level of knowledge, understanding, skills and experience that are needed to actively conduct basic or applied research on an international level. In particular, it aims to provide students with a critical scientific attitude towards the central themes of A.I. As a master-after-master program, it is assumed that the students entering this program have already achieved the general skills and attitudes defined for any masters program. Nevertheless, it is also within the aims of the program to further strengthen the skills and attitudes, as defined in the concept of guided self-study, within the specific scientific context that AI offers.

ECS-option: In the ECS option, in addition to the above, the program aims at instilling a problem-solving attitude towards the practice of AI. Upon completion of the program, students should be familiar with the fundamentals of AI, be aware of its reasonable expectations, have practical experience in solving AI-problems and be acquainted with a number of advanced areas within the field.

SLT-option: In the SLT-option, in addition to the general aims, the program aims to provide all necessary background and skills which are required to fully understand and to actively participate in the fast developing multi-disciplinary field of Speech and Language processing. This includes a thorough understanding of the theories and models that shape the field, as well as practical experience with a variety of technologies that are used and currently developed.

BDA-option: In the BDA-option, in addition to the general aims, the program aims to train graduates from Computer Science to become specialists in the analysis of Big Data. It instructs the students in Statistics, Machine Learning, Data Mining and Advanced programming techniques for dealing with Big Data. It offers a range of application domains in Information Retrieval, Bio-Informatics, Computer Vision and others.

For a more detailed overview of the goals, we refer to the online program description.
3. CONTACT INFORMATION

PROGRAM DIRECTOR
Johan Suykens, ESAT-STADIUS, Kasteelpark Arenberg 10, 3001 Heverlee,
phone: 016/32 18 02, fax: 016/32 19 70, e-mail: johan.suykens@esat.kuleuven.be

SECRETARIAT
Ann Paredis, Dept. Computer Science, Celestijnenenlaan 200A, 3001 Heverlee, room:00.02
phone: 016/32 91 81, fax: 016/32 79 96, e-mail: Ann.Paredis@cs.kuleuven.be
working days are Monday and Tuesday (8.00-16.30), Thursday and Friday (12.30-16.30).

OMBUDS (person to be contacted for questions concerning exams and exam regulations)
Vincent Vercruyssen, address as above, room 04.34,
phone: 016/37 42 65, fax: 016/32 79 96, e-mail: vincent.vercruyssen@kuleuven.be
In case of absence, the replacing ombudsperson is Evgenia Korneva, address as above, room 03.159
phone: 016/32 24 02, fax: 016/32 79 96, email: Evgenia.Korneva@kuleuven.be

COORDINATOR SLT OPTION
Prof. Frank Van Eynde, Centrum Computerlinguïstiek, M. Theresiistraat 21, 3000 Leuven,
phone: 016/32 50 84, fax: 016/32 50 98, e-mail: Frank.Vaneynde@ccl.kuleuven.be

RESPONSABLE FOR INDIVIDUAL STUDY PROGRAMS
Prof. Dirk Vandermeulen, Medical imaging center, UZ Herestraat 49, 3000 Leuven,
phone: 016/34 90 22, fax: 016/34 90 01, e-mail: Dirk.Vandermeulen@esat.kuleuven.be

TEACHING STAFF
Prof. G. Adriaens                  Geert.Adriaens@kuleuven.be
Prof. B. Baesens                  Bart.Baesens@econ.kuleuven.be
Prof. B. Berendt                  Bettina.Berendt@cs.kuleuven.be
Prof. H. Blockeel                 Hendrik.Blockeel@cs.kuleuven.be
Prof. H. Bruyninckx              Herman.Bruyninckx@mech.kuleuven.be
Prof. A. Carbonez                 An.Carbonez@lstat.kuleuven.be
Prof. J. Davis                    Jesse.Davis@cs.kuleuven.be
Prof. M. Denecker                 Marc.Denecker@cs.kuleuven.be
Prof. T. De Laet                  Tinne.Delaet@mech.kuleuven.be
Prof. L. De Raedt                 Luc.DeRaedt@cs.kuleuven.be
Prof. D. De Schreye               Danny.Descrhyse@cs.kuleuven.be
Prof. C. Diaz Martinez            Claudia.Diaz@esat.kuleuven.be
Prof. P. Goos                     Peter.Goos@biw.kuleuven.be
Prof. T. Holvoet                  Tom.Holvoet@cs.kuleuven.be
Prof. G. Janssens                 Gerda.Janssens@cs.kuleuven.be
Prof. M.-F. Moens                 Sien.Moens@cs.kuleuven.be
Prof. Y. Moreau                   Yves.Moreau@esat.kuleuven.be
Prof. D. Roose                    Dirk.Roose@cs.kuleuven.be
Prof. W. Schaeken                 Walter.Schaeken@psy.kuleuven.be
Prof. G. Storms                   Gert.Storms@psy.kuleuven.be
Prof. J. Suykens                  Johan.Suykens@esat.kuleuven.be
Prof. K. Talavera Pérez          Karel.Talavera@med.kuleuven.be
Prof. B. Thijs                    Bart.Thijs@kuleuven.be
Prof. D. Van Compernolle          Dirk.Vancompernolle@esat.kuleuven.be
Prof. V. Vandehghaniste           Vincent.Vandehghaniste@ccl.kuleuven.be
Prof. D. Vandermeulen             Dirk.Vandermeulen@esat.kuleuven.be
Prof. F. Van Eynde                Frank.Vaneynde@ccl.kuleuven.be
Prof. M. Van Hulle                Marc.Vanhulle@med.kuleuven.be
Prof. A. Van Wieringen            Astrid.VanWieringen@med.kuleuven.be
Prof. K. Verfaillie               Karl.Verfaillie@psy.kuleuven.be
Prof. R. Vergauwen                Roger.Vergauwen@hiw.kuleuven.be
Prof. J. Wagemans                 Johan.Wagemans@psy.kuleuven.be
4. THE ARTIFICIAL INTELLIGENCE PROGRAM

The MAI program consists of three options (ECS, SLT and BDA). Each option has its own package of courses.

All students must follow 10 to 11 courses and make a thesis. For the ECS option, 6 courses are mandatory and 5 can be selected freely. For the SLT option, 7 courses are mandatory and 4 can be selected freely. In the BDA option 6 courses are mandatory and 4 can be selected freely.

All students have to fill out their individual program via KU Loket by mid-October. It needs to be approved by the ISP board of professors (ISP = Individual Study Program) of the MAI program.

Students from the ECS option are assumed to have taken a course on Object Oriented Programming prior to this program. For ECS students who did not follow such a course in a previous program it is mandatory to select the course “Basic Programming” within the current master AI program.

For students in the SLT option, it is not assumed that they already followed a course on Object Oriented Programming. They also need to select the course “Basic Programming”, if they did not follow such a course previously.

Students in the BDA option are assumed to be very experienced programmers. The list of optional courses they are allowed to select is restricted to topics relevant to BDA.

Note that you may ask to drop certain courses, in case these courses (or an equivalent course) were already followed in a previous program.

Once the program is approved by the ISP evaluation commission it becomes final.

For the courses in the second semester, students will get the chance to change their selection in the beginning of the second semester.

5. SELF-TEST FOR ECS AND BDA STUDENTS

In the ECS and the BDA options, a good background in mathematics and in programming is expected. To help the students to determine whether their background is very good, good, sufficient or less good, we have developed a web-based self-test in mathematics and algorithms. The test can be found on the Student Information page of MAI. It takes about 1 hour of time to solve.

We advise the ECS and BDA students to take the test. If you find (parts of) the test very difficult, then this should alarm you that it might be good to read up a bit on the topics that you experienced as very difficult. There is no other purpose to the test.
6. EXAMINATIONS

The Master of Artificial Intelligence program uses a 2-semester system. This implies that at the end of both semesters an exam period is organized for all courses taught during that semester:

First semester: exam period takes place in January
Second semester: exam period takes place in June.

Students can not redo exams from the first semester in June (one has to wait until September for redoing exams).

Students enrolled at the University are automatically enrolled for the examination in January and June.

All official regulations to pass the exams or to transfer credits between exam periods (or between academic years) can be consulted on the following webpage:

https://www.kuleuven.be/education/regulations/2016/

Vincent Vercruyssen is appointed as ombudsperson for the MAI program. He can provide extra information or advice. He can also mediate in cases of conflict. We will organize an information session during the year to explain a number of the examination regulations to students who are new in KU Leuven.

In order to get an idea of typical exam questions for the several courses, there is additional information available at the MAI website with several examples for the different courses.
7. THESIS

All students need to complete a thesis (either approximately 50 pages for the thesis text or a publishable paper of about 20 pages). The promotor of the thesis decides on the choice between these two. Standard is the 50-pages format.

The students therefore need to select a topic for the thesis. A list with thesis proposals is available on the e-bulletin board on the MAI-website. (this list is occasionally updated in the first couple of weeks of the new academic year, so that it is advised to check it more than once).

Information sessions on thesis topics are held on Tuesday, October 3, 13.00–18.00hrs in Celestijnenlaan 200 A – room 05.152 [back up session on Monday, October 9, 16.00–19.00hrs in Celestijnenlaan 200 A – room 05.152]. Here individual supervisors or daily advisors (who guides the student for the thesis) will provide additional information about these thesis proposals.

There will be an introductory session on the use of Matlab for those students who are not familiar with this tool. This session is on Wednesday, October 18, 12.00–13.30hrs, in 200A-00.124.

Students are required to take contact with the contact person mentioned in the selected thesis topic’s description. After agreement between the student and the supervisor, the latter signs a form (see Appendix 3) that states that the project is assigned to the student.

Signed forms need to be returned to the secretariat of MAI by 30 October, 2017.

Information on what is expected from an MAI-thesis and how the thesis will be evaluated is available in Appendix 4.

For the SLT option, the option coordinator also provides the possibility of performing an internship and writing the thesis as a report on that internship. Communication concerning this possibility will be announced.
8. FACILITIES

Classrooms

Most classes of the Master of Artificial Intelligence program take place at the Campus Arenberg in Heverlee. On the timetable (appendix 1) you can find the abbreviation of the rooms, the explanation of this abbreviation and the correct address you can find on the plan (appendix 2).

Computer facilities

The students obtain a KU Leuven ("Ludit") e-mail address, a login I.D. and a password while registering in the University Hall, Naamsestraat 22, Leuven.

PC-labs are available on several locations, e.g. Celestijnenlaan 200C. The PC-labs of the Department of Computer Science, Celestijnenlaan 200A, rooms 00.25, 00.26, 00.124 will also be available for use by students. The Department of Computer Science building and its PC-labs are open to students on a 24/24 hours basis.

Students can also use the printer on the ground floor of the Department of Computer Science. You are entitled to 250 pages of free printing. After the first 250 pages, each printed page costs 5 cent.

Important: Normally MAI-students can enter the Department of Computer Science using their student card. Normally their KU Leuven account also works on the PC-labs of Computer Science. If either of the two above does not work, please contact the system-people in office 200A – 01.03.

Students can also rent a PC at very reasonable prices. Please contact the PC Shop, W. de Croylaan 52A, Heverlee or http://www.ludit.kuleuven.be/index_en.htm.

Library

The Campus Library is situated at the W. de Croylaan 6, 3001 Heverlee. Opening hours are Monday to Friday, from 9 a.m. to 10 p.m., and Saturdays, from 9 a.m. to 1 p.m.

You can search for books and journals using CWIS: http://bib.kuleuven.be.

Books and master’s theses (but no journals) can be borrowed for a maximum of 14 days. It is possible to extend this period by informing the librarian or by means of the internet. If you return books late, you have to pay a fine. The library also offers a photocopying service.

In order to make use of the library services, a “studentenkaart” is required. You receive this I.D. card after your official registration in the master’s program at the University Hall, Naamsestraat 22, Leuven. The card gives access to all libraries of the KU Leuven. The card also gives you access to the ground floor of the Computer Science building during hours when it is closed.

Student restaurant ALMA

There are three student restaurants at KU Leuven where one has the choice between several meals at a moderate cost. ALMA 3 is located nearby the Arenberg Castle.
Appendix 1: Timetable

For daily use the timetable is easily accessible via the mai-webpage: http://www.mai.kuleuven.be/studentinfopage.html, by going to “Detailed program”, click on the righthand side “Master of Artificial Intelligence – 60 ECTS” and click then on “Schedule” (also at righthand side).

Note: these are preliminary timetables (please check regularly for updates). The second semester information will be available later.
Appendix 2: Plan of the campus
## Appendix 3: Thesis form

**Thesis information**

<table>
<thead>
<tr>
<th>Name:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Option (ECS/SLT/BDA):</td>
</tr>
<tr>
<td>Thesis title:</td>
</tr>
<tr>
<td>Promotor(s):</td>
</tr>
<tr>
<td>Signature of promotor(s):</td>
</tr>
<tr>
<td>Name(s) of daily leader(s):</td>
</tr>
</tbody>
</table>

Hand in before **October 30, 2017** at the MAI secretariat, Dept. Computer Science
Appendix 4: Thesis evaluation guidelines

Master AI Thesis: Criteria for Evaluation and Score Assignment

1 Introduction

This document informs about a number of important criteria for delivering a high quality thesis and how the thesis work is being assessed and evaluated within the master of Artificial Intelligence programme at KU Leuven. The output of the thesis work consists of three main parts:

1. Thesis text
   Important points: writing style, language, readability and structure of the text.

2. Final thesis presentation
   This includes a 20 min. oral presentation and 10 to 15 min. questions by the jury consisting of the promotor(s), assessors and daily advisor(s).

   Important points: style of the presentation, language, structure, completeness, usage of time.

3. Work done during the year
   Important points: independence, quality and amount of work, potentially software-aspects.

2 General criteria

To give an indication of what is relevant towards the score, a list of important points is given here:

• Scope of the thesis
  - Volume of literature study
  - Embedding in/of existing paradigms, systems, software or algorithms
  - Difficulties with use of existing systems
  - Extensive interactions with end users
  - Scale of analysis/design/implementation/testing
  - Scope of research activity
• **Realization of the thesis**
  - Have the goals been accomplished?
  - Quality and method of the solution
  - Has the student been able to independently apply the basic methods of scientific research?
  - Has the student done what was asked of him/her?
  - Has the student done more than was asked and taken additional initiatives?
  - Has the student reported on a regular basis?

• **Difficulty of the work**
  - Complexity of the task
  - To which extent is shown that unmet goals were not attainable within the scope of the thesis?
  - Is there an original and/or significant scientific contribution?

• **Thesis text**
  - Correctness
  - Completeness
  - Clarity of the text
  - Structure
  - Language
  - Setting in scientific domain
  - Clear and well interpretable graphs and figures
  - Correct quotation of the scientific literature
  - Plagiarism is absolutely forbidden

• **Oral presentation**
  - Language
  - Clear and well-structured slides
  - Usage of time
  - Setting of topic for broad audience
  - Demonstration of software if any

• **Defense**
  - Response to questions
  - Clarification of presentation
• **Attitude**
  - Amount of dedication and initiative
  - Critical attitude w.r.t. literature, guidance from advisor/promotor and own results

• **Additional circumstances**
  - Was the task too difficult or too easy?
  - Was there a lack of guidance?

### 3 Score assignment

The score reflects all three parts of the thesis: text, presentation/defense and daily work. Note that most of the people in the jury can only base their evaluation on the text and the presentation. For this reason a discussion takes places among the promotor(s), assessors and daily advisor(s) after the thesis presentation to reach a consensus about the final score. The daily advisor and promotor can inform the other members of the jury about the student’s daily work during this discussion.

The qualitative score assignment is as follows:

- **18-20 = exceptional result**
  Excellent work in all aspects. This thesis could result in a good scientific publication according to the criteria of the research group.

- **16-17.5 = very good result**
  Very good work and high degree of originality; the student has a good grasp of the subject and has shown to possess a critical attitude.

- **14-15.5 = good result**
  Good work, good insights but the original contribution is rather limited. The student has proven to master the subject.

- **12-13.5 = acceptable result**
  Acceptable results, but some there are a few minor errors in the delivered work. Limited own contributions from the student.

- **10.5-11.5 = minimally acceptable**
  Some of the results are dubious, small errors in the delivered work. Limited or no own contribution from the student.

- **10 = absolute threshold**

- **9.5 or less = unacceptable**
  One or more of the following aspects hold for this thesis: work of inferior quality, serious shortcomings or errors, incomplete according to the minimal goals for the thesis, the student did not contribute to the work, the student has no understanding of the subject.

- **Not taken.** No thesis was presented.

*Note:* In case a score lower than 10 or a score of 18 or higher is decided, the promotor needs to send a written motivation to the Master AI secretariat. This is in accordance to the guidelines of the faculty of engineering.

The above guidelines hold for the ECS, BDA and SLT option. In the SLT option the work done during the year takes the form of an internship, where the daily advisor monitors and supervises the work during the internship.