

AI Applications (BCS) (B-UCLL-MBI38J)

6 ECTS  English  First term  Cannot be taken as part of an examination contract

 D'Espallier Jan (coordinator) | D'Espallier Jan

POC PBA Toegepaste informatica (Leuven)

Aims

DLR 1. The professional bachelor TI analyses a problem, translates it into an IT context and represents the information needs of an organisation in a structured way using analysis and modelling techniques.

- The student can identify stakeholder needs and constraints (preconditions) and apply these in the choice of the design he makes.
- The student is able to independently investigate which (partial) solutions have already been made available by others.
- The student is able to weigh up when AI is necessary to achieve a certain goal, or when possibly a classical conventional approach is more efficient.
- The student knows the most important AI architectures and can apply them in the design he makes.
- The student can weigh whether, on the one hand, it is more appropriate to fall back on existing (pre-trained) AI models, or to develop and train a model himself.

DLR 2. The professional bachelor TI collects and processes process and data data, stores them and makes them available in such a way that they can be retrieved correctly and efficiently.

- The student learns to collect appropriate training and test data. He/she knows the key principles of data preprocessing and feature engineering and can apply them in the design he/she produces.

DLR. 3 The professional bachelor TI designs, builds, documents and tests quality IT solutions.

- The student knows the importance

Previous knowledge

- The student has his/her own laptop.
- The student can program in python
 - can set up a virtual environment
 - can use keras for AI
 - knows the power of unit testing
- The student can work with github (basics)
- The student knows the basic concepts of Machine Learning.
- The student knows the basics of Advanced AI. (more specifically Neural Networks)
- The student dares to make mistakes
- The student dares to ask questions.
- The student is motivated and completes his/her assignments from the start of the workshops

Identical courses

This course is identical to the following courses:

MBI46H : AI Applications

Is included in these courses of study

[Courses for Exchange Students - Technology \(Leuven\)](#)

[PBA Applied Computer Science \(Leuven\)](#), 180 ects. 

Activities

6 ects. **AI Applications (BCS)** (B-UCLL-MBI38j) 

6 ECTS  English **Format: Lecture-practical-assignment**  First term

Content

Students are presented with a 'case' (computer vision) that has already been realised by the lecturer in the recent past in his role as AI researcher at UCLL.

The students are divided into smaller groups. In the first lesson, a kick-off (KO) meeting with a customer is simulated. Students are asked to 'work together' to design and develop the best possible solution to the customer's problem. The progress per group is evaluated weekly and adjusted if necessary during contact moments (workshops). The lecturer acts as 'mentor'. The main effort will be made by the students 'outside' the framework of these workshops. The various groups themselves are responsible for the practical organisation of their team and project.

The following concepts will be covered:

- Analysis of customer requirements. Including asking the right questions to best understand and note the client's objectives.
- Creativity
- Technical design of a possible solution
- Reusing (and possibly fine-tuning) existing AI models
- Design of own model
- Collection and preparation of data
- Conventional engineering
- Implementation of a prototype application in python.
- Evaluation of the performance of the developed application.
- Presentation of the work delivered to the lecturer.

Course material

The study material is a combination of materials that will be made available through the online learning platform Toledo.

Language of instruction: more information

Given the international nature of the group of students, classes and necessary materials are offered in English.

Evaluation

AI Applications (BCS) (B-UCLL-M83829)

Type : Continuous assessment without exam during the examination period

Description of evaluation : Project/Product, Report, Presentation, Process evaluation

Type of questions : Open questions, Closed questions

Learning material : Course material, Computer

Explanation

Assessment	Grading scale
TOTAL	1-20/20 scale

Points to be obtained: 20

- 5 points on assignments
- 15 points on the final result, evaluating the following items:
 - report
 - presentation
 - solution

Information about retaking exams

For the second examination opportunity, students will have the chance to improve and resubmit the submitted final result of the first examination opportunity.

Points to be obtained: 20

- 5 points on assignments (transferred from first exam opportunity)
- 15 points on the final result, evaluating the following items:
 - report
 - presentation
 - solution

 Required in stage	 Optional in stage	 First term	 Second term	 Both terms
 This year	 Next year	 Alternating years	 External	 Prerequisites
 Taught by	 Language of instruction	 Duration		