UCLouvain

SINC1BA

2021 - 2022

Bachelor in Computer Science

At Charleroi - 180 credits - 3 years - Day schedule - In French
Dissertation/Graduation Project : **NO** - Internship : **NO**
Activities in English: **NO** - Activities in other languages : **NO**
Activities on other sites : **NO**
Main study domain : **Sciences**
Organized by: **Louvain School of Engineering (EPL)**
Programme acronym: **SINC1BA** - Francophone Certification Framework: 6

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SINC1BA - Introduction

Introduction

SINC1BA - Teaching profile

Learning outcomes

On successful completion of this programme, each student is able to :

SINC1BA Programme

Detailed programme by subject

- Mandatory
- Optional
- Not offered in 2021-2022
- Not offered in 2021-2022 but offered the following year
- Offered in 2021-2022 but not the following year
- Not offered in 2021-2022 or the following year
- Activity with requisites
- [FR] Teaching language (FR, EN, ES, NL, DE, ...)

Click on the course title to see detailed informations (objectives, methods, evaluation...)

Content:

Formation en informatique

				Year 1	2	3
LSINC1101	Computer Science 1: Introduction to Programming	Kim Mens Siegfried Nijssen	FR [q1] [30h+30h] [5 Credits]	x		
LSINC1102	Computer Hardware Principles	Olivier Bonaventure	FR [q2] [30h+30h] [5 Credits]	x		
LSINC1103	Introduction to Algorithmics		FR [q2] [30h+30h] [5 Credits]	x		
LSINC1001	Project 1 in Computer Science: Applications and Introduction to IoT	Guillaume Rosinosky	FR [q1] [30h+30h] [5 Credits]	x		
LSINC1002	Project 2 in Computer Science: Design of an Interactive Website	Renaud Detry	FR [q2] [30h+30h] [5 Credits]	x		
LSINC1402	Computer Science 2	Sébastien Jodogne Ramin Sadre Pierre Schaus	FR [q1] [30h+30h] [5 Credits]		x	
LSINC1201	Interaction and Visualization Techniques		FR [q1] [30h+30h] [5 Credits]		x	
LSINC1123	Calculability, Logic and Complexity	Yves Deville	FR [q2] [30h+30h] [5 Credits]		x	
LSINC1104	Programming Paradigms and Concurrency	Peter Van Roy	FR [q2] [30h+30h] [5 Credits]		x	
LSINC1503	Project 3 in Computer Science: Improvement of Algorithms Efficiency	Olivier Bonaventure Axel Legay	FR [q2] [30h+30h] [5 Credits]		x	
LSINC1121	Algorithms and data structure		FR [q1] [30h+30h] [5 Credits] △			x
LSINC1252	Informaticals Systems		FR [q1] [30h+30h] [5 Credits] △			x
LSINC1301	Databases and modeling		FR [q1] [30h+30h] [5 Credits] △			x
LSINC1361	Introduction to artificial intelligence		FR [q2] [30h+30h] [5 Credits] △			x
LSINC1341	Computer networks		FR [q2] [30h+30h] [5 Credits] △			x

				Year 1	2	3
LSINC1313	Numerical algorithmic		FR [q2] [30h+30h] [5 Credits] Δ			x
LSINC1509	Project 4: application of databases		FR [q2] [30h+30h] [5 Credits] Δ			x

Formation en mathématiques et science des données

LSINC1111	Calculus	Stéphanie Guérit Vincent Wertz (coord.)	FR [q1] [30h+30h] [5 Credits]	x		
LSINC1112	Algebra	Stéphanie Guérit Vincent Wertz (coord.)	FR [q2] [30h+30h] [5 Credits]	x		
LSINC1113	Additional Mathematics	Pierre-Yves Gousenbourger	FR [q1] [30h+30h] [5 Credits]		x	
LSINC1211	Probability and Statistics		FR [q2] [30h+30h] [5 Credits]		x	
LSINC1114	Analysis of biological data		FR [q1] [30h+30h] [5 Credits] Δ			x
LSINC1109	Statistiques et sciences des données		FR [q2] [30h+30h] [5 Credits] Δ			x

Formation en sciences du vivant

LSINC1131	General and Organic Chemistry	Karine Glinel Patricia Luis Alconero Valérie Norberg Jenny Pouyez	FR [q1] [30h+30h] [5 Credits]	x		
LSINC1132	General biology		FR [q1] [30h+30h] [5 Credits]	x		
LSINC1133	Introduction to Human Physiology	Jean-François Rees	FR [q2] [30h+30h] [5 Credits]	x		
LSINC1231	Biochemistry		FR [q1] [30h+30h] [5 Credits]		x	
LSINC1232	Elements of Human Pathology	Xavier Banse Thomas Schubert	FR [q1] [30h+30h] [5 Credits]		x	
LSINC1233	Biodiversity, Biological and Ecological Evolution	Philippe Baret Jonathan Scauflaire	FR [q2] [30h+30h] [5 Credits]		x	
LSINC1331	Molecular biology		FR [q1] [30h+30h] [5 Credits] Δ			x
LSINC1332	Biotechnology: omics		FR [q2] [30h+30h] [5 Credits] Δ			x

Formation en langues et sciences humaines

LSST1002	Information and critical thinking	Myriam De Kesel Jean-François Rees	FR [q2] [30h+30h] [5 Credits]	x		
LANGL1182	English for Computer Scientists	Lucille Meyers (coord.)	EN [q1] [30h] [5 Credits]	x		
LSINC1241	Law, Ethics and Technology		FR [q2] [30h+30h] [5 Credits]		x	
LANGL1183	English for Computer Scientists II	Lucille Meyers (coord.)	EN [q1] [30h] [5 Credits]		x	
LSINC1805	People management		FR [q1] [15h+15h] [3 Credits] Δ			x
LANGL1184	English for Computer Scientists III		EN [q1] [20h] [2 Credits] Δ			x

Course prerequisites

The **table** below lists the activities (course units, or CUs) for which there are one or more prerequisites within the programme, i.e. the programme CU for which the learning outcomes must be certified and the corresponding credits awarded by the jury before registering for that CU.

These activities are also identified **in the detailed programme**: their title is followed by a yellow square.

Prerequisites and student's annual programme

As the prerequisite is for CU registration puposes only, there are no prerequisites within a programme year. Prerequisites are defined between CUs of different years and therefore influence the order in which the student will be able to register for the programme's CUs.

In addition, when the jury validates a student's individual programme at the beginning of the year, it ensures its coherence, meaning that it may:

- transform a prerequisite into a corequisite within the same year (to enable the student to continue his or her studies with a sufficient annual course load)
- require the student to combine registration in two separate CUs which it considers necessary from a pedagogical point of view.

For more information, please consult the Academic Regulations and Procedures (https://uclouvain.be/fr/decouvrir/rgee.html).

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 # Prerequisities list

LANGL1183 "Anglais pour informaticiens II" has prerequisite(s) LANGL1182

- LANGL1182 - English for Computer Scientists

LSINC1104 "Paradigmes de programmation et concurrence" has prerequisite(s) LSINC1101

- LSINC1101 - Computer Science 1: Introduction to Programming

LSINC1113 "Compléments de mathématiques" has prerequisite(s) LSINC1111 ET LSINC1112

- LSINC1111 - Calculus
- LSINC1112 - Algebra

LSINC1123 "Calculabilité, logique et complexité" has prerequisite(s) LSINC1101 ET LSINC1103

- LSINC1101 - Computer Science 1: Introduction to Programming
- LSINC1103 - Introduction to Algorithmics

LSINC1211 "Probabilités et statistiques" has prerequisite(s) LSINC1111 ET LSINC1112

- LSINC1111 - Calculus
- LSINC1112 - Algebra

LSINC1231 "Biochimie" has prerequisite(s) LSINC1131 ET LSINC1132

- LSINC1131 - General and Organic Chemistry
- LSINC1132 - General biology

LSINC1232 "Eléments de pathologie humaine" has prerequisite(s) LSINC1131 ET LSINC1133

- LSINC1131 - General and Organic Chemistry
- LSINC1133 - Introduction to Human Physiology

LSINC1402 "Informatique 2" has prerequisite(s) LSINC1101

- LSINC1101 - Computer Science 1: Introduction to Programming

LSINC1503 "Projet 3: amélioration de l'efficacité d'algorithmes" has prerequisite(s) LSINC1101 ET LSINC1001 ET LSINC1002

- LSINC1101 - Computer Science 1: Introduction to Programming
- LSINC1001 - Project 1 in Computer Science: Applications and Introduction to IoT
- LSINC1002 - Project 2 in Computer Science: Design of an Interactive Website

The programme's courses and learning outcomes

For each UCLouvain training programme, a reference framework of learning outcomes specifies the the skills expected of every graduate on completion of the programme. Course unit descriptions specify targeted learning outcomes, as well as the unit's contribution to reference framework of learning outcomes.

Detailed programme per annual block

SINC1BA - 1ST ANNUAL UNIT

- Mandatory
- Optional
- Not offered in 2021-2022
- Not offered in 2021-2022 but offered the following year
- Offered in 2021-2022 but not the following year
- Not offered in 2021-2022 or the following year
- Activity with requisites
- [FR] Teaching language (FR, EN, ES, NL, DE, ...)

Click on the course title to see detailed informations (objectives, methods, evaluation...)

Content:

Formation en informatique

LSINC1101	Computer Science 1: Introduction to Programming	Kim Mens Siegfried Nijssen	FR [q1] [30h+30h] [5 Credits]
LSINC1102	Computer Hardware Principles	Olivier Bonaventure	FR [q2] [30h+30h] [5 Credits]
LSINC1103	Introduction to Algorithmics		FR [q2] [30h+30h] [5 Credits]
LSINC1001	Project 1 in Computer Science: Applications and Introduction to IoT	Guillaume Rosinosky	FR [q1] [30h+30h] [5 Credits]
LSINC1002	Project 2 in Computer Science: Design of an Interactive Website	Renaud Detry	FR [q2] [30h+30h] [5 Credits]

Formation en mathématiques et science des données

LSINC1111	Calculus	Stéphanie Guérit Vincent Wertz (coord.)	FR [q1] [30h+30h] [5 Credits]
LSINC1112	Algebra	Stéphanie Guérit Vincent Wertz (coord.)	FR [q2] [30h+30h] [5 Credits]

Formation en sciences du vivant

LSINC1131	General and Organic Chemistry	Karine Glinel Patricia Luis Alconero Valérie Norberg Jenny Pouyez	FR [q1] [30h+30h] [5 Credits]
LSINC1132	General biology		FR [q1] [30h+30h] [5 Credits]
LSINC1133	Introduction to Human Physiology	Jean-François Rees	FR [q2] [30h+30h] [5 Credits]

Formation en langues et sciences humaines

LSST1002	Information and critical thinking	Myriam De Kesel Jean-François Rees	FR [q2] [30h+30h] [5 Credits]
LANGL1182	English for Computer Scientists	Lucille Meyers (coord.)	EN [q1] [30h] [5 Credits]

SINC1BA - 2ND ANNUAL UNIT

- O Mandatory
- ⊠ Optional
- △ Not offered in 2021-2022
- ⊘ Not offered in 2021-2022 but offered the following year
- ⊕ Offered in 2021-2022 but not the following year
- △ ⊕ Not offered in 2021-2022 or the following year
- Activity with requisites
- [FR] Teaching language (FR, EN, ES, NL, DE, ...)

Click on the course title to see detailed informations (objectives, methods, evaluation...)

Content:

Formation en informatique

O LSINC1402	Computer Science 2	Sébastien Jodogne Ramin Sadre Pierre Schaus	FR [q1] [30h+30h] [5 Credits]
O LSINC1201	Interaction and Visualization Techniques		FR [q1] [30h+30h] [5 Credits]
O LSINC1123	Calculability, Logic and Complexity	Yves Deville	FR [q2] [30h+30h] [5 Credits]
O LSINC1104	Programming Paradigms and Concurrency	Peter Van Roy	FR [q2] [30h+30h] [5 Credits]
O LSINC1503	Project 3 in Computer Science: Improvement of Algorithms Efficiency	Olivier Bonaventure Axel Legay	FR [q2] [30h+30h] [5 Credits]

Formation en mathématiques et science des données

O LSINC1113	Additional Mathematics	Pierre-Yves Gousenbourger	FR [q1] [30h+30h] [5 Credits]
O LSINC1211	Probability and Statistics		FR [q2] [30h+30h] [5 Credits]

Formation en sciences du vivant

O LSINC1231	Biochemistry		FR [q1] [30h+30h] [5 Credits]
O LSINC1232	Elements of Human Pathology	Xavier Banse Thomas Schubert	FR [q1] [30h+30h] [5 Credits]
O LSINC1233	Biodiversity, Biological and Ecological Evolution	Philippe Baret Jonathan Scauflaire	FR [q2] [30h+30h] [5 Credits]

Formation en langues et sciences humaines

O LSINC1241	Law, Ethics and Technology		FR [q2] [30h+30h] [5 Credits]
O LANGL1183	English for Computer Scientists II	Lucille Meyers (coord.)	EN [q1] [30h] [5 Credits]

SINC1BA - 3RD ANNUAL UNIT

- O Mandatory
- ⊠ Optional
- △ Not offered in 2021-2022
- ⊘ Not offered in 2021-2022 but offered the following year
- ⊕ Offered in 2021-2022 but not the following year
- △ ⊕ Not offered in 2021-2022 or the following year
- Activity with requisites
- [FR] Teaching language (FR, EN, ES, NL, DE, ...)

Click on the course title to see detailed informations (objectives, methods, evaluation...)

Content:

Formation en informatique

O LSINC1121	Algorithms and data structure		FR [q1] [30h +30h] [5 Credits] △
O LSINC1252	Informaticals Systems		FR [q1] [30h +30h] [5 Credits] △
O LSINC1301	Databases and modeling		FR [q1] [30h +30h] [5 Credits] △
O LSINC1361	Introduction to artificial intelligence		FR [q2] [30h +30h] [5 Credits] △
O LSINC1341	Computer networks		FR [q2] [30h +30h] [5 Credits] △
O LSINC1313	Numerical algorithmic		FR [q2] [30h +30h] [5 Credits] △
O LSINC1509	Project 4: application of databases		FR [q2] [30h +30h] [5 Credits] △

Formation en mathématiques et science des données

O LSINC1114	Analysis of biological data		FR [q1] [30h +30h] [5 Credits] △
O LSINC1109	Statistiques et sciences des données		FR [q2] [30h +30h] [5 Credits] △

Formation en sciences du vivant

O LSINC1331	Molecular biology		FR [q1] [30h +30h] [5 Credits] △
O LSINC1332	Biotechnology: omics		FR [q2] [30h +30h] [5 Credits] △

Formation en langues et sciences humaines

O LSINC1805	People management		FR [q1] [15h +15h] [3 Credits] △

LANGL1184	English for Computer Scientists III		EN [q1] [20h] [2 Credits] △

SINC1BA - Information

Access Requirements

Decree of 7 November 2013 defining the landscape of higher education and the academic organization of studies.
The admission requirements must be met prior to enrolment in the University.

In the event of the divergence between the different linguistic versions of the present conditions, the French version shall prevail.

SUMMARY

General access requirements

Except as otherwise provided by other specific legal provisions, admission to undergraduate courses leading to the award of a Bachelor's degree will be granted to students with one of the following qualifications :

1. A Certificate of Upper Secondary Education issued during or after the 1993-1994 academic year by an establishment offering full-time secondary education or an adult education centre in the French Community of Belgium and, as the case may be, approved if it was issued by an educational institution before 1 January 2008 or affixed with the seal of the French Community if it was issued after this date, or an equivalent certificate awarded by the Examination Board of the French Community during or after 1994;

2. A Certificate of Upper Secondary Education issued no later than the end of the 1992-1993 academic year, along with official documentation attesting to the student's ability to pursue higher education for students applying for a full-length undergraduate degree programme;

3. A diploma awarded by a higher education institution within the French Community that confers an academic degree issued under the above-mentioned Decree, or a diploma awarded by a university or institution dispensing full-time higher education in accordance with earlier legislation;

4. A higher education certificate or diploma awarded by an adult education centre;

5. A pass certificate for one of the entrance examinations (https://uclouvain.be/fr/etudier/inscriptions/examens-admission.html) organized by higher education institutions or by an examination board of the French Community; this document gives admission to studies in the sectors, fields or programmes indicated therein;

6. A diploma, certificate of studies or other qualification similar to those mentioned above, issued by the Flemish Community of Belgium, the German Community of Belgium or the Royal Military Academy;

7. A diploma, certificate of studies or other qualification obtained abroad and deemed equivalent to the first four mentioned above by virtue of a law, decree, European directive or international convention;

Note:

Requests for equivalence must be submitted to the Equivalence department (Service des équivalences) of the Ministry of Higher Education and Scientific Research of the French Community of Belgium in compliance with the official deadline.

The following two qualifications are automatically deemed equivalent to the Certificate of Upper Secondary Education (Certificat d'enseignement secondaire supérieur – CESS):

- European Baccalaureate issued by the Board of Governors of a European School,

- International Baccalaureate issued by the International Baccalaureate Office in Geneva.

8. Official documentation attesting to a student's ability to pursue higher education (diplôme d'aptitude à accéder à l'enseignement supérieur - DAES), issued by the Examination Board of the French Community.

Specific access requirements

- To be eligible to apply to a bachelor's programme, holder of a non-belgian degree who do not have Belgian student status must also:
  - have earned a secondary school degree within the last three years;
  - not already hold a bachelor's degree; and,
- Candidates, whatever their nationality, with a secondary school diploma from a country outside the European Union, must have obtained an average of 13/20 minimum or, failing that, have obtained this average, have passed one year of study in Belgium (for example special Maths / sciences).
- For any secondary school diploma **from a European Union country**, the admission request must contain the equivalence of your diploma or, at the very least, proof of the filing of the equivalence request with the Wallonia-Brussels Federation (French Community of Belgium). For any information relating to obtaining an equivalence, please refer to the following site.

- Not to have obtained a secondary education diploma for more than 3 years maximum. Example: for an admission application for the academic year 2021-2022, you must have obtained your diploma during the academic years 2018-2019, 2019-2020 or 2020-2021. In the French Community of Belgium, the academic year runs from September 14 to September 13.l_information/2021/common-bachelor/

Access based on validation of professional experience

Admission to undergraduate studies on the basis of accreditation of knowledge and skills obtained through professional or personal experience (Accreditation of Prior Experience)

Subject to the general requirements laid down by the authorities of the higher education institution, with the aim of admission to the undergraduate programme, the examination boards accredit the knowledge and skills that students have obtained through their professional or personal experience.

This experience must correspond to at least five years of documented activity, with years spent in higher education being partially taken into account: 60 credits are deemed equivalent to one year of experience, with a maximum of two years being counted. At the end of an assessment procedure organized by the authorities of the higher education institution, the Examination Board will decide whether a student has sufficient skills and knowledge to successfully pursue undergraduate studies.

After this assessment, the Examination Board will determine the additional courses and possible exemptions constituting the supplementary requirements for the student's admission.

Special requirements to access some programmes

- Admission to **undergraduate studies in engineering: civil engineering and architect**

  Pass certificate for the special entrance examination for undergraduate studies in engineering: civil engineering and architect (https://uclouvain.be/fr/facultes/epl/examenadmission.html).

  Admission to these courses is always subject to students passing the special entrance examination. Contact the faculty office for the programme content and the examination arrangements.
- Admission to **undergraduate studies in veterinary medicine**

  Admission to undergraduate studies in veterinary medicine is governed by the Decree of 16 June 2006 regulating the number of students in certain higher education undergraduate courses (non-residents) (https://uclouvain.be/en/study/inscriptions/etudes-contingentees.html).
- Admission to **undergraduate studies in physiotherapy and rehabilitation**

  Admission to undergraduate studies in physiotherapy and rehabilitation is governed by the Decree of 16 June 2006 regulating the number of students in certain higher education undergraduate courses (non-residents). (https://uclouvain.be/en/study/inscriptions/etudes-contingentees.html)
- Admission to **undergraduate studies in psychology and education: speech and language therapy**

  Admission to undergraduate studies in psychology and education: speech and language therapy is governed by the Decree of 16 June 2006 regulating the number of students in certain higher education undergraduate courses (non-residents) (https://uclouvain.be/en/study/inscriptions/etudes-contingentees.html).
- Admission to **undergraduate studies in medicine and dental science**

  Admission to undergraduate studies in medecine and dental science is governed by the Decree of 16 June 2006 regulating the number of students in certain higher education undergraduate courses (non-residents). (https://uclouvain.be/en/study/inscriptions/etudes-contingentees.html)

  Note: students wishing to enrol for a **Bachelor's degree in Medicine** or a **Bachelor's degree in dental science** must first sit an aptitude test (fr) (https://uclouvain.be/en/study/inscriptions/etudes-contingentees.html).

Evaluation

The evaluation methods comply with the regulations concerning studies and exams (https://uclouvain.be/fr/decouvrir/rgee.html). More detailed explanation of the modalities specific to each learning unit are available on their description sheets under the heading "Learning outcomes evaluation method".

Contacts

Curriculum Management

Entity

Structure entity	SST/EPL/INFO
Denomination	(INFO)
Faculty	Louvain School of Engineering (EPL)
Sector	Sciences and Technology (SST)
Acronym	INFO
Postal address	Place Sainte Barbe 2 - bte L5.02.01 1348 Louvain-la-Neuve Tel: +32 (0) 10 47 31 50 - Fax: +32 (0) 10 45 03 45

Academic supervisor: Olivier Bonaventure (https://uclouvain.be/repertoires/olivier.bonaventure)

Jury

- Président du jury: Jean-Didier Legat (https://uclouvain.be/repertoires/jean-didier.legat)
- Secrétaire du jury: Vincent Wertz (https://uclouvain.be/repertoires/vincent.wertz)

Useful Contact(s)

- Conseillère aux études: Sofie De Pauw (https://uclouvain.be/repertoires/sofie.depauw)