

INGE1BA - Introduction

Introduction

INGE1BA - Teaching profile

Learning outcomes

This programme aims at developing the students' capacity for reflection, critical analysis and decision-making in the domains of Economic and Business Sciences, of Sciences and of Technology.

It is based, on the one hand, on the acquisition of knowledge within the disciplines of Economic Science, Business Engineering Sciences and Social Sciences, the Exact Sciences and Technology, and, on the other hand, on the know-how acquired through a pedagogical approach which fosters the active participation of the students in their own training. This approach is rooted in the reality of economic life and organisations.

On a general level, one year is dedicated to the acquisition of knowledge in the general disciplines belonging of the ESPO Faculty and the Exact Sciences, one year is dedicated to the specific developments of those disciplines with respect to Economic Analysis and Business Science, and one year is dedicated to the study of economic and business problems and methods as well as to the study of technologies. In comparison with the bachelor's programme of Economic and Business Sciences, this programme is much more clearly orientated towards the study and application of the quantitative methods of Business Engineering.

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

Comme tout bachelier de la Faculté des sciences économiques, sociales, politiques et de communication :

AAC1. Maîtriser et mobiliser les savoirs fondamentaux (connaissances, modèles, théories, concepts) de la discipline (ou des disciplines) située(s) au cœur de son orientation d'études et de ses domaines d'application, pour comprendre l'être humain en société et l'ensemble des relations, organisations et institutions auxquelles il participe.

AAC1.1. Démontrer une connaissance et une compréhension critique du socle de savoirs approfondis (connaissances, modèles, théories, concepts) de la discipline (ou des disciplines) de son orientation (autrement dénommée sa « majeure » sur le site de Louvain-la-Neuve) et de ses domaines d'application.

AAC1.2. Comprendre, expliciter et analyser de manière critique, à l'aide du socle de savoirs de la discipline (des disciplines), différentes problématiques propres à son orientation.

AAC2. Maîtriser et mettre en œuvre les premiers jalons d'une démarche universitaire (démarche de recherche scientifique et méthodologique rigoureuse) située sur le plan épistémologique pour approfondir des questionnements/phénomènes relatifs à la (aux) discipline(s) de son orientation.

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* Pour l'anglais (toutes les compétences langagières), Niveau B2 du cadre européen commun de référence.

Pour le néerlandais, l'espagnol ou l'allemand : certaines compétences langagières au Niveau B1 et certains au Niveau B2 du cadre européen commun de référence.

AAC4.3. Travailler en équipe : interagir, collaborer et s'organiser efficacement au sein d'une équipe et gérer les relations de groupe.

AAC4.4. Adopter une attitude de dialogue efficace et respectueuse en ajustant le mode de communication en fonction de l'interlocuteur (pairs, enseignants, personnel administratif, monde socio-professionnel) et en faisant preuve de capacité d'écoute, d'empathie et d'assertivité.

AAC5. Agir en autonomie, en acteur critique et responsable soucieux du respect de valeurs éthiques et citoyennes et en ayant construit son projet de formation en perspective de la poursuite de son développement personnel et professionnel.

AAC5.1. Faire preuve d'autonomie dans son parcours de formation : gérer de manière autonome son travail (définir les priorités, anticiper et planifier l'ensemble de ses activités dans le temps), faire preuve de recul critique sur ses propres acquis, ses méthodes d'apprentissage et ses productions et intégrer de manière autonome de nouvelles connaissances et compétences en réponse à des situations balisées.

AAC5.2. Mobiliser de manière critique les connaissances acquises afin de prendre position et d'agir de manière responsable en étant soucieux de valeurs éthiques et citoyennes.

AAC5.3. Se construire un projet de formation et s'orienter vers un projet professionnel « éclairé » : se projeter dans un master en continuité avec la discipline de son orientation (ou au besoin dans une réorientation raisonnée) en ayant identifié les thématiques et des domaines dans lesquels le futur diplômé souhaiterait s'insérer professionnellement.

Plus spécifiquement, en tant que bachelier en ingénieur de gestion :

AAS1. Maîtriser de manière active un socle de savoirs de différentes disciplines (sciences de gestion, méthodes quantitatives, sciences économiques, sciences et technologies, sciences humaines, droit) indispensables pour analyser des problématiques dans les différents domaines du management.

AAS1.1. Maîtriser les concepts fondamentaux et les théories de base dans chacun des domaines du management (finance, marketing, recherche opérationnelle, ressources humaines, stratégie, etc).

AAS1.2. Maîtriser un socle de savoirs dans le domaine des sciences humaines, et plus spécifiquement les sciences économiques.

AAS1.3. Maîtriser un socle de savoirs dans le domaine des mathématiques, des méthodes quantitatives en économie et gestion, ainsi qu'en informatique / algorithmique.

AAS1.4. Maîtriser un socle de savoirs dans le domaine du droit, et plus spécifiquement les règles législatives qui régissent toute activité économique.

AAS1.5. Maîtriser un socle de savoirs dans le domaine des sciences et technologies (chimie, physique et applications technologiques).

AAS1.6. Articuler des savoirs issus de différentes disciplines afin de pouvoir résoudre un problème simple mais concret de gestion ou analyser un phénomène socio-économique.

AAS2. Adopter une démarche scientifique en développant un raisonnement rigoureux et en mobilisant des compétences analytiques spécifiques pour analyser des problèmes et des situations de management.

AAS2.1. Mener un raisonnement analytique rigoureux clair et structuré en appliquant des cadres conceptuels et des modèles scientifiquement fondés pour décrire et analyser un problème, tout en se situant dans un paradigme pertinent.

AAS2.2. Collecter, sélectionner et analyser les informations pertinentes selon les méthodes éprouvées de traitement statistique.

AAS2.3. Modéliser une situation concrète à l'aide de modèles scientifiquement fondés, de manière rigoureuse et réfléchie, en portant un regard critique sur les hypothèses de validité.

AAS2.4. Analyser et interpréter des résultats ou des propositions jusqu'à la critique argumentée pour un problème lié à la gestion.

AAS2.5. Faire preuve de discernement (validité et pertinence) dans la collecte des sources d'information et de précision dans leur référencement.

AAS2.6. Communiquer son analyse et ses résultats de manière professionnelle : concevoir et réaliser des présentations orales et des rapports professionnels en utilisant des logiciels spécialisés et en construisant des tableaux et graphiques pertinents, répondant aux standards scientifiques et techniques, en fonction des messages cibles à communiquer.

AAS2.7. Faire preuve de rigueur dans chacune des étapes de la démarche scientifique.

AAS3. Confronter différentes rationalités et logiques d'action pour comprendre et analyser un problème concret d'une organisation/entreprise.

AAS3.1. Comprendre le fonctionnement interne d'une organisation/entreprise de taille et de complexité limitée.

AAS3.2. Situer et comprendre ce fonctionnement dans son contexte socio-économique et discerner les enjeux interdisciplinaires.

AAS3.3. Mobiliser des savoirs interdisciplinaires (articuler des concepts de domaines de preuve de S4com6dfoncti, ress9t5r0 0 -1 0 518.022eny0 0

AAS5.2 S'exercer à développer un regard argumenté et critique, en adoptant une posture d'acteur socialement responsable, vis-à-vis de l'évolution des phénomènes socio-économiques, technologiques et environnementaux contemporains (entre autres, les impacts de processus de gestion, de production, technologiques, ainsi que d'innovation).

AAS5.3. Appréhender de manière critique les enjeux du 21^e siècle, notamment les interrelations entre crises écologiques, sociales et économiques.

Programme structure

The programme is organised in the form of one single line of studies of 180 credits, into which are integrated 26 credits in Sciences and Technology.

The programme comprises courses in Sciences and Technology, and an intensive course in Mathematics and Statistics. Nevertheless, the programme is still conceived in such a way as to satisfy the minimum demands of each of the subjects within the pool of subjects common to the ESPO. This thus allows for the same possibilities of re-orientation as the other ESPO bachelor programmes, thanks to the recognition of the equivalence of the credits.

In addition, those students admitted - after the selection process - to the "Creating a Company" orientation, must add one extra course to their programme for (a maximum of) 9 credits. This "Creating a Company" orientation is spread over the third year of the Bachelor's and over the two years of the master's of Business Engineering.

INGE1BA Programme

Detailed programme by subject

- Mandatory
- ❖ Optional
- △ Not offered in 2023-2024
- Not offered in 2023-2024 but offered the following year
- ⊕ Offered in 2023-2024 but not the following year
- △

● LINGE1317

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 purposes 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:

- require the student to combine registration in two separate CUs which it considers necessary from a pedagogical point of view.
- transform a prerequisite into a corequisite if the student is in the final year of a degree course.

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

Prerequisites list

LALLE1332	"Deutsch Mittelstufe II"	has prerequisite(s) LALLE1230
		• LALLE1230 - Deutsch Mittelstufe I
LANGL1332	"Anglais des affaires"	has prerequisite(s) LANGL1330
		• LANGL1330 - English intermediate level - 1st part
LECGE1212	"Macroéconomie"	has prerequisite(s) LINGE1114
		• LINGE1114 - Mathematics I: analysis
LECGE1222	"Microéconomie"	has prerequisite(s) LINGE1114
		• LINGE1114 - Mathematics I: analysis
LECGE1330	"Industrial organization"	has prerequisite(s) LANGL1330 ET LINGE1114
		• LANGL1330 - English intermediate level - 1st part
		• LINGE1114 - Mathematics I: analysis
LESPA1332	"Espagnol pour Sciences économiques, deuxième partie (B1.1 - B1.2)"	has prerequisite(s) LESPA1230
		• LESPA1230 - General Spanish for Economics (1st part)
LESPO1321	"Economic, Political and Social Ethics"	has prerequisite(s) LANGL1330
		• LANGL1330 - English intermediate level - 1st part
LINGE1213	"Physique II"	has prerequisite(s) LINGE1114
		• LINGE1114 - Mathematics I: analysis
LINGE1214	"Statistique approfondie"	has prerequisite(s) LINGE1113
		• LINGE1113 - Probability
LINGE1216	"Management sciences : modèles déterministes"	has prerequisite(s) LINGE1114
		• LINGE1114 - Mathematics I: analysis
LINGE1221	"Econométrie"	has prerequisite(s) LINGE1113
		• LINGE1113 - Probability
LINGE1222	"Analyse statistique multivariée"	has prerequisite(s) LINGE1113
		• LINGE1113 - Probability
LINGE1316	"Production and Operations management"	has prerequisite(s) LANGL1330 ET LINGE1114
		• LANGL1330 - English intermediate level - 1st part
		• LINGE1114 - Mathematics I: analysis
LINGE1317	"Recherche et développement technologique : énergie, électronique et télécommunications"	has prerequisite(s) LINGE1115 ET LINGE1122
		• LINGE1115 - Chemistry (Part 1)
		• LINGE1122 - Physics 1
LINGE1327	"Recherche et développement technologique : mécanique, procédés chimiques et matériaux"	has prerequisite(s) LINGE1115 ET LINGE1122
		• LINGE1115 - Chemistry (Part 1)
		• LINGE1122 - Physics 1
LNEER1332	"Algemeen en economisch Nederlands - Intermediair niveau deel 2"	has prerequisite(s) LNEER1230
		• LNEER1230 - General Dutch - Intermediate level - part 1

The programme's courses and learning outcomes

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

o Méthodes quantitatives

o LINGE1113	Probability	Johan Segers	FR [q2] [30h +15h] [4 Credits] 
o LINGE1114	Mathematics I: analysis	Heiner Olbermann	FR [q1] [30h +30h] [5 Credits] 
o LINGE1121	Mathematics II: algebra and matrix calculus	Tom Claeys	FR [q2] [30h +30h] [5 Credits] 

o Sciences et technologie

o LINGE1122	Physics 1	Giacomo Bruno	FR [q2] [40h +20h] [5 Credits] 
o LINGE1115	Chemistry (Part 1)	Yaroslav Filinchuk	FR [q1] [50h +10h] [5 Credits] 

o Droit

o LESPO1122	Foundations of Law	Pierre Bazier Nicolas Bonbled Arnaud Hoc Thibaut Slingeneyer de Goeswin	FR [q1 or q2] [40h] [5 Credits] 
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o Langues

o LANGL1330	English intermediate level - 1st part	Stéphanie Brabant Estelle Dagneaux Jean-Luc Delghust Aurélie Deneumouster Fanny Desterbecq Marie Duelz Claudine Grommersch Adrien Kefer (compensates Sandrine Mulkers) Marc Piwnik (coord.)
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INGE1BA - 2ND ANNUAL UNIT

- Mandatory
 - ❖ Optional
 - △ Not offered in 2023-2024
 - ⊖ Not offered in 2023-2024 but offered the following year
 - ⊕ Offered in 2023-2024 but not the following year
 - △ ⊕ Not offered in 2023-2024 or the following year
 - Activity with requisites
 - 🌐 Open to incoming exchange students
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Sarah Barroo

Hilde Bosmans [([q1+q2])] TJ 1 0 0 -1 4.72800016 25.86499977 Tm [(60h) [5]] TNL1 0 0 -1 0.954 35.10200119 Tm [(Credits)] TJ ET q 6 0 0 -5.647 25.061001 35.102001 cr

○ Langues

○ LANGL1332	Business English 	Catherine Avery Aurélie Deneumouestier Fanny Desterbecq Adrien Kefer Sandrine Mulkers (coord.) Philippe Neyt (compensates Lucille Meyers) Hila Peer Mark Theodore Pertuit Marc Piwnik (coord.)	 [q1+q2] [60h] [5 Credits] 
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○ Deuxième langue étrangère

L'étudiant choisit et garde la même langue tout au long de son programme de bachelier

 LALLE1332	German Intermediate II 	Ann Rinder (coord.)	 [q1+q2] [60h] [5 Credits] 
 LESPA1332	Spanish for Economics, 2nd part (B1.1 - B1.2) 	Fernando Juan San Basilio Pardo Osvaldo Serey Mendoza (coord.)	 [q1+q2] [60h] [5 Credits] 
 LNEER1332	Intermediate Dutch for business studies 	Sarah Barroo Hilde Bosmans (coord.) Hilde Bufkens Katrien De Rycke Sara Jonkers (coord.) Simon Labate	

INGE1BA - 3RD ANNUAL UNIT

- Mandatory
- ❖ Optional
- △ Not offered in 2023-2024
- Not offered in 2023-2024 but offered the following year
- ⊕ Offered in 2023-2024 but not the following year
- △ ⊕ Not offered in 2023-2024 or the following year
- Activity with requisites
- 🌐 Open to incoming exchange students
- ☒ Not open to incoming exchange students
- [FR] Teaching language (FR, EN, ES, NL, DE, ...)

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

○ Content:

○ Formation pluridisciplinaire en sciences humaines

● LESPO1321	Economic, Political and Social Ethics ■	Gregory Ponthiere	EN [q2] [30h] [3 Credits] 🌐
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○ Economie

● LECGE1330	Industrial organization ■	Paul Belleflamme	EN [q1] [30h +15h] [5 Credits] 🌐
● LINGE1221	Econometrics ■	Sébastien Van Bellegem	FR [q2] [30h +15h] [5 Credits] 🌐

○ Gestion

● LINGE1321	Marketing	Chantal de Moerloose	EN [q2] [30h +15h] [5 Credits] 🌐
● LINGE1315	Finance	Philippe Grégoire Prabal Shrestha	FR [q1] [30h +15h] [5 Credits] 🌐
● LINGE1224	Human Management	Stéphanie Coster Edina Dóci	EN [q2] [30h +15h] [5 Credits] 🌐 > French- friendly
● LINGE1316	Production and Operations management ■	Per Joakim Agrell Daniele Catanzaro	EN [q1] [30h +15h] [5 Credits] 🌐
● LECGE1315	Business Strategy	Alain Vas	FR [q1 or q2] [20h +10h] [4 Credits] 🌐

○ Méthodes quantitatives

● LINGE1322	Computer science: Analysis and Design of Information Systems	Jean Vanderdonckt	FR [q2] [30h +15h] [5 Credits] 🌐
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○ Sciences et technologie

● LINGE1317	Research and technological development: energy, electronics and telecommunications ■	Francesco Contino Benoît Macq	FR [q1] [32.5h +7.5h] [4 Credits] 🌐
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● LINGE1327

INGE1BA - 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
- Specific access requirements
- Access based on validation of professional experience
- Special requirements to access some programmes

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) (<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

- Access to bachelor programmes for candidates of nationality outside the European Union who are not assimilated to Belgian nationals is subject to the following criteria:
 - not have obtained a secondary education diploma for more than 3 years maximum. Example: for an admission application for the academic year 2023-2024, you must have obtained your diploma during the academic years 2020-2021, 2021-2022 ou 2022-2023. In the French Community of Belgium, the academic year runs from September 14 to September 13
 - not already hold an undergraduate degree
- 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). A non-successful year will not be taken into consideration.

- 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](#).
- For any secondary school diploma **from a country outside the European Union**, the admission application must contain the [equivalence of your diploma](#) issued by the Wallonia-Brussels Federation (French Community of Belgium). If you have a restrictive equivalence for the programme of your choice, in addition of it, you **must** have either the **DAES** or a certificate of successful completion of the [examination giving access to 1st cycle studies](#) when you submit your application

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-contingentes.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-contingentes.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-contingentes.html)

- Admission to **undergraduate studies in medicine and dental science**

[Admission to undergraduate studies in medicine 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-contingentes.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-contingentes.html>.

