ARCH2 Ingénieur civil architecte (Diploma of the Second Cycle (Ingénieur civil) in Architecture)

Programme management
AUCE Département d'architecture, d'urbanisme et de génie civil environnemental
Responsable académique : Jean Stillemans
Contact : Jean Stillemans Tél. 010478933 stillemans@arch.ucl.ac.be

Study objectives
The programme trains students in the subject of architecture by building on the knowledge and skills proper to Applied Sciences. The ability to carry out a full architectural project is one of the main aims of these studies. This is acquired on parallel lines with learning the sciences and technologies of construction, the theory and history of architectonic forms, representation methods and an ethical positioning supported by Human Sciences.

Admission conditions
The study programmes leading to a university degree in Civil Architect-Engineering are accessible to all students holding a Belgian university first study cycle diploma ("candidat") in Civil Architect-Engineering. Holders of a foreign diploma judged to be equivalent, may also have access to these programmes.

Admission procedure
The University admission and enrolment procedures are detailed in the section "Access to Studies" on the web page : http://www.ucl.ac.be/etudes/libres/acces.html

General structure of the programme
The programme is organised in the form of three years of studies, or six quadrimesters, which lead on from the two years of the first cycle of university studies ("candidature") in Civil Architect-Engineering. The courses, practical exercises and project workshops are grouped together in five subject areas which form a core syllabus :
1. Conception and composition
2. Architecture, towns and territory
3. Structure and materials
4. Construction works
5. Applied Physics, climate, equipment, sustainable development

As from the fourth quadrimester, the students will choose an orientation from among four complementary modules :
1. Conception and composition
2. Architecture, towns and territory
3. Structure and technology
4. Construction works
5. Applied Physics, climate, equipment, sustainable development

This orientation completes the core syllabus of the subject areas and fully involves the students right until the end of the programme. It determines the courses, practical exercises and project workshops to be followed in the context of the complementary module, as well as the topics on which their studies will be based.

Programme content
1. Programme composition
   General and Polyvalent courses
   AMCO2591 Législation du bâtiment et éléments du droit industriel[22.5h] Pierre Nihoul
   (2 credits) (in French)
   FSAC1570 A préciser (in French)
Specialised courses
Students will follow 5 shortened modules, corresponding to 5 subjects of the core courses and, from the 4th quadrimester on, the complementary module corresponding to the orientation chosen.

**Shortened modules**

**Conception and composition**

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
<th>Instructor</th>
</tr>
</thead>
<tbody>
<tr>
<td>AMCO2341</td>
<td>Introduction to theories of architectural design</td>
<td>2</td>
<td>Olivier Masson</td>
</tr>
<tr>
<td>AMCO2343</td>
<td>Design Mechanisms</td>
<td>2</td>
<td>Nicolas Van Oost</td>
</tr>
<tr>
<td>AMCO2346</td>
<td>Philosophical and aesthetic approaches to architecture</td>
<td>2</td>
<td>Jules-Gérard Simon, Jean Stillemans</td>
</tr>
<tr>
<td>AMCO2347</td>
<td>Anthropological approaches to architecture and the city</td>
<td>2</td>
<td>Jules-Gérard Simon</td>
</tr>
<tr>
<td>AMCO2350</td>
<td>History of the arts and techniques of architecture: Special questions</td>
<td>2</td>
<td>David Vanderburgh</td>
</tr>
<tr>
<td>AMCO2349</td>
<td>Contemporary questions in architectural theory</td>
<td>2</td>
<td>David Vanderburgh</td>
</tr>
<tr>
<td>AMCO2371</td>
<td>Methods of architectural composition</td>
<td>2</td>
<td>Jean Stillemans</td>
</tr>
<tr>
<td>AMCO2372</td>
<td>Dessin de conception : CAO</td>
<td>4</td>
<td>Marc Lejeune</td>
</tr>
<tr>
<td>AMCO2373</td>
<td>Design drawing : Manual</td>
<td>3</td>
<td>Gérard Dutry</td>
</tr>
<tr>
<td>AMCO2374</td>
<td>Atelier interstitiel du projet 2 (orientation: conception et composition)</td>
<td>2</td>
<td>David Vanderburgh</td>
</tr>
<tr>
<td>AMCO2521</td>
<td>Studio 1: The architecture of the edifice</td>
<td>4</td>
<td>Yves Lepere</td>
</tr>
<tr>
<td>AMCO2522</td>
<td>Studio 2: The architecture of the edifice</td>
<td>4</td>
<td>Olivier Bourez</td>
</tr>
<tr>
<td>AMCO2523</td>
<td>Studio 3: The architecture of the edifice</td>
<td>4</td>
<td>Jean Stillemans</td>
</tr>
<tr>
<td>AMCO2524</td>
<td>Studio 4: The architecture of the urban</td>
<td>4</td>
<td>Bernard Declève</td>
</tr>
<tr>
<td>AMCO2525</td>
<td>Studio 5: Architecture, construction and utilities</td>
<td>7</td>
<td>Yves Lepere</td>
</tr>
</tbody>
</table>

**Architecture, towns and territory**

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
<th>Instructor</th>
</tr>
</thead>
<tbody>
<tr>
<td>AMCO2351</td>
<td>Architecture urbaine 1 : la ville et ses parties</td>
<td>2</td>
<td>Christian Gilot</td>
</tr>
<tr>
<td>AMCO2451</td>
<td>Architecture urbaine 2 : la ville comme oeuvre collective</td>
<td>2</td>
<td>Christian Gilot</td>
</tr>
<tr>
<td>AMCO2452</td>
<td>Interstitial exercises for Studio 4 (orientation: architecture, the city and the territory)</td>
<td>2</td>
<td>Christian Gilot</td>
</tr>
<tr>
<td>AMCO2453</td>
<td>History of the arts and techniques of the city</td>
<td>2</td>
<td>Christian Gilot</td>
</tr>
<tr>
<td>AUCE2970</td>
<td>Sociologie de l'habitat</td>
<td>3</td>
<td>Daniel Bodson</td>
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</table>

**Structure and materials**

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
<th>Instructor</th>
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<tbody>
<tr>
<td>MECA2100</td>
<td>Deformable solid mechanics</td>
<td>7</td>
<td>Issam Doghri</td>
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<tr>
<td>AMCO2183</td>
<td>Mechanic of structures</td>
<td>5</td>
<td>Jean-François Remacle</td>
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<tr>
<td>AMCO2031</td>
<td>STRUCTURAL MATERIALS</td>
<td>2</td>
<td>Jean-François Cap</td>
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<tr>
<td>AMCO2032</td>
<td>DESIGN OF REINFORCED CONCRETE STRUCTURES</td>
<td>4</td>
<td>Jean-François Cap</td>
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</table>

**Construction works**

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
<th>Instructor</th>
</tr>
</thead>
<tbody>
<tr>
<td>AMCO2171</td>
<td>Geology and mineralogy</td>
<td>4</td>
<td>Christian Schroeder, Philippe Sonnet</td>
</tr>
</tbody>
</table>
AMCO2172 Soil Mechanics[30h+22.5h] (5 credits) (in French) Jacques De Jaeger, Jean-François Thimus
AMCO2173 Application of Soil Mechanics[30h+22.5h] (5 credits) (in French) Jacques De Jaeger, Alain Holeyman
AMCO2382 Architectural construction 2 (the exterior envelope)[22.5h] (2 credits) (in French) Paolo Amaldi
AMCO2383 Architectural construction 3 (the interior envelope)[22.5h] (2 credits) (in French) Benoît Vandenbulcke
AMCO2384 Interstitial exercises for Studio 5 (orientation: structures and technology)[30h] (3 credits) (in French) Nicolas Van Oost
AMCO2385 Architectural construction 4 (Finishes, utilities)[22.5h] (2 credits) (in French) Paolo Amaldi
AMCO2388 Project management - office management[15h] (2 credits) (in French) Nicolas Van Oost
AMCO2389 The construction industry and building specifications[15h] (2 credits) (in French) Nicolas Van Oost

Applied Physics, climate, equipment, sustainable development
AMCO2361 Building physics I: thermal characteristics, acoustics, and lighting[30h+15h] (4 credits) (in French) Marcelo Blasco, André De Herde, Elisabeth Gratia, Peter Wouters
AMCO2362 Interstitial exercises for Studio 3 (orientation: climate and sustainable development)[15h] (1 credits) (in French) Magali Bodart, André De Herde

Complementary modules
Conception and composition
AMCO2344 Programming for large-scale projects[15h] (2 credits) (in French) Nicolas Van Oost
AMCO2345 Architectural theory seminar[30h] (3 credits) (in French) David Vanderburgh
AMCO2526 Studio 6a: Architecture of the edifice, orientation: design and composition[60h] (10 credits) (in French) Yves Lepere, David Vanderburgh

Architecture, towns and territory
AUCE2940 Morphologie urbaine et analyse des paysages[45h] (4.5 credits) (in French) Bernard Declève, Rosanna Forray, Jean-Pol Van Reybroeck
AUCE2930 Processus territoriaux et modèles de développement[30h] (3 credits) (in French) Marie-Laurence De Keersmaecker, Yves Hanin, Frédéric Lapeyre
AMCO2527 Studio 6b: Architecture of the edifice, orientation: architecture, the city, the territory[60h] (10 credits) (in French) Christian Gilot, Jean Stillemans

Structure and technology
AMCO2186 Design and realisation of structure[45h] (4 credits) (in French) Eli Schmit
AMCO2528 Studio 6c: Architecture and construction of the edifice, orientation: structures and technology[60h] (10 credits) (in French) Paolo Amaldi, Yves Lepere

Applied Physics, climate, equipment, sustainable development
AMCO2364 Interstitial exercises for Studio 5 (orientation: climate and sustainable development)[15h] (2 credits) (in French) André De Herde

Options
Each student will be required to follow 90 hours of option orientations and 120 hours of free options spread over the 2nd and 3rd year of the programme.

Option orientations
The 90 hours will be taken in the subject chosen as an orientation as from the 4th quadrimester, from among the following courses:
Conception and composition
The list is established each year by the programme management committee.

Architecture, towns and territory
The list is established each year by the programme management committee.

Structure and technology

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Name</th>
<th>Hours</th>
<th>Credits</th>
<th>Language</th>
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<tbody>
<tr>
<td>MECA2510</td>
<td>Dynamics of elastic systems.[30h+30h] (5 credits) (in French)</td>
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<tr>
<td>AMCO2185</td>
<td>DESIGN OF PRESTRESSED CONCRETE STRUCTURES[22.5h+15h] (3 credits) (in French)</td>
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<tr>
<td>AMCO2187</td>
<td>Project of structures[60h] (4 credits) (in French)</td>
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<tr>
<td>AMCO2188</td>
<td>Dynamique des structures[30h+30h] (5 credits) (in French)</td>
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<tr>
<td>AMCO2386</td>
<td>Conception de l'architecture avec le bois[22.5h] (2 credits) (in French)</td>
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<tr>
<td>AMCO2387</td>
<td>Architecture civile (Rénovation, restauration et technologie de l'architecture)[15h] (2 credits) (in French)</td>
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Applied Physics, climate, équipement, sustainable development

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Name</th>
<th>Hours</th>
<th>Credits</th>
<th>Language</th>
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<tbody>
<tr>
<td>BIOL1210</td>
<td>Eléments d'écologie (in French)</td>
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<tr>
<td>ENVI3007</td>
<td>Energies renouvelables[30h] (4 credits) (in French)</td>
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<td>SEHY3206</td>
<td>Contrôle des facteurs physiques d'ambiance[30h] (in French)</td>
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<tr>
<td>ELEC2680</td>
<td>Lighting and photometry[15h+15h] (3 credits) (in French)</td>
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Free options
The 120 hours will be chosen from among the courses offered on other FSA programmes or by other faculties. The choice suggested by the student will be submitted to the programme Management Committee for approval.

Language course
During the second cycle, the students may follow various language courses organised by the ILV. These courses represent at least 30 hours (3 credits) of the total volume of the optional part of their programme. A specific course, aimed at improving the language skills linked to their professional interactive communicative capabilities, is especially organised for the FSA students.

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Name</th>
<th>Hours</th>
<th>Credits</th>
<th>Language</th>
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</thead>
<tbody>
<tr>
<td>ANGL2470</td>
<td>English communication skills for engineers[30h] (3 credits)</td>
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</table>

ATHENS courses
The European network, ATHENS, organises two sessions a year of intensive courses (in November and March). These courses are recognised by the Faculty as normal options. They feature on the student's programme just like courses with a certain volume of hours (22.5 hours - 15 hours) to the value of 2 credits.

Apprenticeship
The students are invited to carry out a period of apprenticeship for a minimal length of three weeks during their second study cycle. This apprenticeship represents 3 credits (30 hours) in the overall calculation of the volume of their programme. It needs to be given prior approval by the relevant person on the programme Management Committee and will conclude with a report. It will be ratified by an evaluation indicating that the student “has satisfied/has not satisfied the requirements”.

End of course project
The end of course project consists of an architectural and/or town planning project, the theme of which will relate to the orientation chosen as from the 4th quadrimester. It may also consist of a theoretical, experimental or critical study from the orientations on offer.

2. Programmes per study year

ARCH 21  First year

First quadrimester

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Name</th>
<th>Hours</th>
<th>Credits</th>
<th>Language</th>
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</thead>
<tbody>
<tr>
<td>MECA2901</td>
<td>Continuum mechanics.[30h+30h] (5 credits) (in French)</td>
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<tr>
<td>AMCO2371</td>
<td>Methods of architectural composition[22.5h] (2 credits) (in French)</td>
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<tr>
<td>AMCO2374</td>
<td>Atelier interstitiel du projet 2 (orientation: conception et composition)[30h] (2 credits) (in French)</td>
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<tr>
<td>AMCO2521</td>
<td>Studio 1: The architecture of the edifice[45h] (4 credits) (in French)</td>
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</tr>
<tr>
<td>AMCO2522</td>
<td>Studio 2: The architecture of the edifice[30h] (4 credits) (in French)</td>
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<tr>
<td>AMCO2171</td>
<td>Geology and mineralogy[30h+15h] (4 credits) (in French)</td>
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<tr>
<td>AMCO2172</td>
<td>Soil Mechanics[30h+22.5h] (5 credits) (in French)</td>
<td></td>
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</tr>
</tbody>
</table>
AMCO2382 Architectural construction 2 (the exterior envelope)[22.5h] (2 credits) (in French) Paolo Amaldi

AMCO2383 Architectural construction 3 (the interior envelope)[22.5h] (2 credits) (in French) Benoît Vandenbulcke

AMCO2361 Building physics 1: thermal characteristics, acoustics, and lighting[30h+15h] (4 credits) (in French) Marcelo Blasco, André De Herde, Elisabeth Gratia, Peter Wouters

AMCO2347 Anthropological approaches to architecture and the city[22.5h] (2 credits) (in French) Jules-Gérard Simon

Second quadrimester

BIR1311 Thermodynamics[30h+15h] (3.5 credits) (in French) Yann Bartosiewicz

AMCO2341 Introduction to theories of architectural design[22.5h] (2 credits) (in French) Olivier Masson

AMCO2350 History of the arts and techniques of architecture: Special questions[22.5h] (2 credits) (in French) David Vanderburgh

AMCO2372 Dessin de conception : CAO[15h+45h] (4 credits) (in French) Marc Lejeune

AMCO2352 Studio 3: The architecture of the edifice[30h] (4 credits) (in French) Jean Stillemans

AMCO2354 Studio 4: The architecture of the urban[30h] (4 credits) (in French) Bernard Declève

AMCO2352 Interstitial exercises for Studio 4 (orientation: architecture, the city and the territory)[30h] (2 credits) (in French) Christian Gilot

AMCO2353 History of the arts and techniques of the city[22.5h] (2 credits) (in French) Christian Gilot

MECA2100 Deformable solid mechanics.[45h+45h] (7 credits) (in French) Issam Doghri

AMCO2031 STRUCTURAL MATERIALS[15h+15h] (2 credits) (in French) Jean-François Cap

AMCO2173 Application of Soil Mechanics[30h+22.5h] (5 credits) (in French) Jacques De Jaeger, Alain Holeyman

AMCO2362 Interstitial exercises for Studio 3 (orientation: climate and sustainable development)[15h] (1 credits) (in French) Magali Bodart, André De Herde

ARCH 22 Second year

First quadrimester

MECA2120 Introduction to finite element methods.[30h+30h] (5 credits) (in French) Vincent Legat

AMCO2343 Design Mechanisms[15h] (2 credits) (in French) Nicolas Van Oost

AMCO2347 Anthropological approaches to architecture and the city[22.5h] (2 credits) (in French) Jules-Gérard Simon

AMCO2352 Studio 5: Architecture, construction and utilities[60h] (7 credits) (in French) Yves Lepere


AMCO2351 Architecture urbaine 2 : la ville comme oeuvre collective[22.5h] (2 credits) (in French) Christian Gilot

AMCO2183 Mechanic of structures[30h+30h] (5 credits) (in French) Jean-François Remacle

AMCO2032 DESIGN OF REINFORCED CONCRETE STRUCTURES[22.5h+22.5h] (4 credits) (in French) Jean-François Cap

AMCO2382 Architectural construction 2 (the exterior envelope)[22.5h] (2 credits) (in French) Paolo Amaldi

AMCO2383 Architectural construction 3 (the interior envelope)[22.5h] (2 credits) (in French) Benoît Vandenbulcke

AMCO2384 Interstitial exercises for Studio 5 (orientation: structures and technology)[30h] (3 credits) (in French) Nicolas Van Oost

Second quadrimester

- AMCO2341 Introduction to theories of architectural design [22.5h] (2 credits) (in French) - Olivier Masson
- AMCO2346 Philosophical and aesthetic approaches to architecture [22.5h] (2 credits) (in French) - Jules-Gérard Simon, Jean Stillemans
- AMCO2350 History of the arts and techniques of architecture: Special questions [22.5h] (2 credits) (in French) - David Vanderburgh
- AMCO2349 Contemporary questions in architectural theory [22.5h] (2 credits) (in French) - David Vanderburgh
- AMCO2373 Design drawing: Manual [30h] (3 credits) (in French) - Gérard Dutry
- AMCO2385 Architectural construction 4 (Finishes, utilities) [22.5h] (2 credits) (in French) - Paolo Amaldi
- AMCO2388 Project management - office management [15h] (2 credits) (in French) - Nicolas Van Oost
- AMCO2389 The construction industry and building specifications [15h] (2 credits) (in French) - Nicolas Van Oost
- AMCO2344 Programming for large-scale projects [15h] (2 credits) (in French) - Nicolas Van Oost
- AMCO2345 Architectural theory seminar [30h] (3 credits) (in French) - David Vanderburgh
- AMCO2526 Studio 6a: Architecture of the edifice, orientation: design and composition [60h] (10 credits) (in French) - Yves Lepere, David Vanderburgh
- AMCO2527 Studio 6b: Architecture of the edifice, orientation: architecture, the city, the territory [60h] (10 credits) (in French) - Christian Gilot, Jean Stillemans
- AMCO2528 Studio 6c: Architecture and construction of the edifice, orientation: structures and technology [60h] (10 credits) (in French) - Paolo Amaldi, Yves Lepere
- AMCO2529 Studio 6d: Architecture of the edifice, orientation: climate and sustainable development [60h] (10 credits) (in French) - André De Herde, Jean Stillemans

ARCH 23 Third year

First quadrimester

- AMCO2591 Législation du bâtiment et éléments du droit industriel [22.5h] (2 credits) (in French) - Pierre Nihoul
- FSA2300 Religious Science Questions [15h] (2 credits) (in French) - Bernard Van Meenen
- AMCO2351 Architecture urbaine 1 : la ville et ses parties [22.5h] (2 credits) (in French) - Christian Gilot
- AMCO2451 Architecture urbaine 2 : la ville comme oeuvre collective [22.5h] (2 credits) (in French) - Christian Gilot
- AUCE2940 Morphologie urbaine et analyse des paysages [45h] (4.5 credits) (in French) - Bernard Declève, Rosanna Forray, Jean-Pol Van Reybroeck
- AMCO2186 Design and realisation of structure [45h] (4 credits) (in French) - Eli Schmit
- AMCO2495 Hydraulique urbaine [15h+15h] (2 credits) (in French) - Yves Zech

Second quadrimester

- AMCO2349 Contemporary questions in architectural theory [22.5h] (2 credits) (in French) - David Vanderburgh
- AMCO2346 Philosophical and aesthetic approaches to architecture [22.5h] (2 credits) (in French) - Jules-Gérard Simon, Jean Stillemans
- AMCO2345 Architectural theory seminar [30h] (3 credits) (in French) - David Vanderburgh
AMCO2388  Project management - office management [15h] (2 credits) Nicolas Van Oost 
AUCE2970  Sociologie de l'habitat [30h] (3 credits) (in French) Daniel Bodson 
AMCO2389  The construction industry and building specifications [15h] (2 credits) (in French) Nicolas Van Oost 
FILO1180  Economie politique [45h] (3 credits) (in French) N.

**Evaluation**
The architectural projects during the 3 study years and the end of course project are evaluated by a jury. The courses conclude with a written or oral exam.