

## Block view of the study programme

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### Block 1

Coordinating institution : UCL

Admission and registration procedures should be carried out with the referring establishment.

#### Compulsory courses

NANO0001-1	<i>Seminars on the ethnical and socio-economic aspects of nanotechnology</i> - COLLÉGIALITÉ	Q2	15	15	-	3
SMEM0038-1	<i>Final thesis</i> - COLLÉGIALITÉ	TA	-	-	-	27

#### Optional courses

In agreement with the Jury, choose courses with at least 1 in each of the four above-mentioned discipline, for a total of 30 credits, among :

[...] Depending on the student's previous training and with the agreement of the jury, choose, if necessary, courses for a maximum of 9 credits among the course programme for the institutions organising the complementary masters :

#### A. Fundamental phenomena at the nanoscale

##### Courses organised at the UCL

HULG2105-1	<i>Nano-electronics</i> - Vincent BAYOT, Denis FLANDRE, JeanPierre RASKIN	Q1	30	30	-	5
HULG2106-1	<i>Physics of nanostructures</i> - JeanChristophe CHARLIER, Xavier GONZE, Luc PIRAUX	Q1	37,5	22,5	-	5

##### Courses organised at the ULB

HULG0437-1	<i>Chimie des interfaces et nanostructures</i> - N...	Q1	36	24	-	5
HULG0438-1	<i>Nanochemistry and nanotechnology</i> (english language) - N...	Q2	24	24	-	4
HULG2079-1	<i>Moteurs moléculaires et processus stochastiques</i> - N...	Q1	16	24	-	5
HULG2107-1	<i>Nanophysics</i> - Pierre GASPARD, Marc HOU	Q2	24	24	-	5

##### Courses organised at the ULg

CHIM0646-1	<i>Physical chemistry of nanostructures</i> (english language) - AnneSophie DUWEZ	Q1	15	-	-	2
BIOC0724-1	<i>Chemistry of biological macromolecules</i> - Moreno GALLEN, André MATAGNE	Q2	20	-	-	2
PHYS0096-1	<i>Physics of superconductors</i> (english language) - Alejandro SILHANEK	Q1	15	-	-	2
ELEN0069-1	<i>Nanoelectronics / Optoelectronics</i> (english language) - Benoît VANDERHEYDEN - [40h Proj.]	Q2	30	-	[+]	5
PHYS3003-1	<i>Physics of functional oxides</i> (english language) - Philippe GHOSEZ	Q1	20	10	-	4

##### Course organised at the UMons

HULG0439-1	<i>Morphogenesis and instability</i> - N...	Q2	30	15	-	4
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##### Courses organised at the UNamur

HULG0440-1	<i>Supramolecular chemistry</i> - N...	Q1	22,5	-	-	3
HULG0441-1	<i>Advanced theoretical chemistry</i> - N...	Q1	37,5	30	-	6
HULG0478-1	<i>Physique de la supraconductivité</i> - N...	Q1	22	-	-	3

#### B. Nanofabrication, nanomanipulation, nanosynthesis

##### Course organised at the UCL

HULG2108-1 *Techniques of micro-and nanofabrication* - Vincent BAYOT,  
Denis FLANDRE, Laurent FRANCIS, JeanPierre RASKIN Q2 30 30 - 5

**Courses organised at the ULB**

HULG2115-1 *Microfabrication processes* - N... TA 24 12 - 5

HULG2094-1 *Biocompatible and nanostructured materials (english language)* - N... Q2 36 24 - 5

**Courses organised at the ULg**

CHIM0088-1 *Nanomaterials, principles of synthesis and application* -  
Christophe DETREMBLEUR Q1 15 - - 2

MECA0009-2 *Introduction to microtechnology (english language)* - Tristan GILET - [8h  
Labo., 22h Proj.] Q2 12 12 [+] 5

CHIM0072-2 *Nanomaterials and divided materials engineering* - Benoît HEINRICHS,  
Stéphanie LAMBERT Q1 15 15 - 3

**Course organised at the UMons**

HULG2095-1 *Polymer nanocomposite materials* - N... Q2 15 15 - 3

**C. Characterization of nanostructures**

**Courses organised at the UCL**

HULG0442-1 *Advanced transistors (english language)* - N... Q2 30 30 - 5

HULG2096-1 *Characterization of materials surface* - Yves DUFRÈNE,  
Christine DUPONT, Eric GAIGNEAUX Q2 52,5 - - 5

HULG2097-1 *Analyse et traitement des surfaces solides* - N... Q2 30 15 - 5

**Courses organised at the ULB**

HULG0443-1 *Surface analysis of materias (english language)* - N... Q2 24 12 - 5

HULG2082-1 *Surface physics and surface characterization (english language)* -  
Norbert KRUSE Q2 24 - - 3

**Courses organised at the ULg**

NANO0002-1 *Atomic force microscopy and related techniques* - AnneSophie DUWEZ Q1 10 - - 2

PHYS0978-1 *Physics of semi-conductors* - Ngoc Duy NGUYEN Q1 15 15 - 4

CHIM9266-1 *Characterization of nanostructures by scanning probe techniques (english  
language)* - AnneSophie DUWEZ Q1 15 - - 2

CHIM9231-1 *Characterization of Biomaterials (english language)* - Edwin DE PAUW,  
MarieClaire GILLET Q1 15 15 - 4

PHYS0977-1 *Spectroscopy of materials (english language)* - Matthieu VERSTRAETE Q1 20 10 - 4

**Course organised at the UMons**

HULG2083-1 *Local probe microscopy* - Roberto LAZZARONI, Philippe LECLÈRE Q2 15 15 - 3

**Courses organised at the UNamur**

HULG0444-1 *Optical spectroscopies of surfaces and nanostructures* - N... Q1 22 8 - 4

HULG2081-1 *Microscopie électronique, diffraction et EELS* - N... Q1 15 15 - 3

**D. Simulation at the nanoscale**

**Course organised at the UCL**

HULG2117-1 *Atomistic and nanoscopic simulations* - JeanChristophe CHARLIER,  
Xavier GONZE Q2 30 30 - 5

**Course organised at the ULg**

HULG0479-1	<i>Approches computationnelles des états de la matière - N...</i>	Q1	36	24	-	5
<b>Courses organised at the ULg</b>						
CHIM0090-1	<i>Theory and modeling of hybrid molecular complexes -</i> Françoise REMACLE	Q1	15	-	-	3
PHYS0976-1	<i>Quantum modeling of material properties (english language) -</i> Philippe GHOSEZ, Matthieu VERSTRAETE	Q1	20	10	-	4
PHYS0950-1	<i>Physics of nanomaterials (english language) -</i> JeanYves RATY	Q1	20	10	-	4
<b>Course organised at the UMons</b>						
HULG0445-1	<i>Molecular modeling in chemistry - N...</i>	Q2	15	15	-	3
<b>Course organised at the UNamur</b>						
HULG0446-1	<i>Simulation in materials physics - N...</i>	Q1	15	15	-	3
HULG0480-1	<i>Physique des matériaux structurés et des nanostructures - N...</i>	Q2	30	15	-	4
HULG0481-1	<i>Compléments de chimie quantique - N...</i>	Q1	15	-	-	2
<b>E. Miscellaneous</b>						
<b>Courses organised at the UCL</b>						
HULG2085-1	<i>Nanobiotechnology - N...</i>	Q2	30	-	-	3
HULG0447-1	<i>Special electronic devices (english language) - N...</i>	Q1	30	30	-	5
HULG2111-1	<i>Design of Micro and Nanosystems (english language) -</i> Denis FLANDRE, Laurent FRANCIS, Thomas PARDOEN, JeanPierre RASKIN	Q1	30	30	-	5
HULG2086-1	<i>Macromolecular nanotechnology (english language) -</i> Sophie DEMOUSTIER, JeanFrançois GOHY, Alain JONAS, Bernard NYSTEN	Q2	45	15	-	5
HULG2112-1	<i>Transport phenomena in solids and nanostructures (english language) -</i> JeanChristophe CHARLIER, Xavier GONZE, Luc PIRAUX	Q2	30	30	-	5
HULG2113-1	<i>Lasers and Applications - N...</i>	Q2	45	15	-	6
HULG2090-1	<i>Chemometrics -</i> Bernadette GOVAERTS	Q1	22,5	15	-	3
HULG2104-1	<i>Principles of heterogeneous catalysis -</i> Eric GAIGNEAUX	Q1	52,5	-	-	5
HULG2091-1	<i>Statistical Quality Control -</i> Anne DE FRENNE, Bernadette GOVAERTS	Q1	15	5	-	4
<b>Courses organised at the ULB</b>						
HULG0482-1	<i>Interactions supramoléculaires - N...</i>	Q2	24	24	-	5
HULG0449-1	<i>Micro- and nanobiotechnology (english language) - N...</i>	Q2	13	26	-	3
HULG0450-1	<i>(Multi)functional polymers (english language) - N...</i>	Q2	12	24	-	3
HULG0451-1	<i>Molecular engineering applied to the biomedical field - N...</i>	Q1	24	-	-	2
HULG0452-1	<i>Molecular and biomolecular engineering (english language) - N...</i>	Q2	24	12	-	3
HULG2116-1	<i>Composants microtechniques - N...</i>	TA	24	36	-	5
<b>Courses organised at the ULg</b>						
PHYS0975-1	<i>Introduction to soft matter and complex systems -</i> Nicolas VANDEWALLE	Q1	30	-	-	4
CHIM9217-1	<i>Application of nanotechnology to develop new medicine -</i> Brigitte EVRARD, Géraldine PIEL		10	-	-	1
MECA0008-1	<i>Microfluidics (english language) -</i> Tristan GILET - [16h Labo., 14h Proj.]	Q1	22	8	[+]	5
PHYS3023-1	<i>Physics of magnetic materials (english language) -</i> Eric BOUSQUET	Q1	20	10	-	4
CHIM0654-1	<i>Molecular devices and molecular machines -</i> AnneSophie DUWEZ	Q2	15	-	-	2
ELEN0038-1	<i>Microsystems (english language) -</i> Michael KRAFT - [20h Labo., 40h Proj.]	Q2	30	5	[+]	5

CHIM9233-1	<i>Molecular logic</i> (english language) - Françoise REMACLE	Q1	15	-	-	2
CHIM0433-1	<i>Proteomics</i> - Marianne FILLET, Pierre LEPRINCE, Gabriel MAZZUCHELLI	Q2	20	10	-	3
CHIM9216-1	<i>The contribution of electrochemistry to macromolecular chemistry</i> - Christine JÉRÔME	Q2	10	-	-	1
BIOC0720-1	<i>Structure of biological macromolecules</i> - Paulette CHARLIER - [5h Mon. WS]	Q1	15	20	[+]	4
CHIM0637-3	<i>Chemistry of materials, Inorganic materials</i> (english language) - Bénédicte VERTRUYEN	Q1	20	-	-	2

**Courses organised at the UMons**

HULG0453-1	<i>Nanotechnology of the controlled-release formulations</i> - N...	Q2	15	-	-	2
HULG2089-1	<i>Introduction to Nanotechnology</i> - Michel WAUTELET	Q1	15	-	-	2

**Course organised at the UNamur**

HULG2084-1	<i>Interactions intermoléculaires</i> - N...		15	-	-	3
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