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.

Link to the UCLouvain programme: https://uclouvain.be/prog-2018-nano2mc-lnano202t

Preparatory courses and/or prerequisite courses

Depending on the student's previous training, and in agreement with the jury, they may choose, if necessary, courses worth a maximum of 9 credits from the programme of the institutions teaching the specialised master's degree.

Compulsory courses

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

Optional courses

In agreement with the jury, chose courses for a total of 30 credits.

[...] 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 :

[...] In agreement with the jury, choose specialisation courses from the list below, with at least one from each of the four sections, for a total of 8 to 20 credits:

A. Fundamental phenomena

Courses organised at the UCL

HULG2105-1	*Nanoelectronics* (english language) - Vincent BAYOT, Denis FLANDRE, JeanPierre RASKIN	Q1	30	30	-	**5**
HULG2106-1	*Physics of nanostructures* (english language) - JeanChristophe CHARLIER, Xavier GONZE, Luc PIRAUX	Q1	37,5	22,5	-	**5**

Courses organised at the ULB

HULG0437-1	*Chemistry of interfaces and nanostructures* - N...	Q1	36	24	-	**5**
HULG0438-1	*Nanochemistry and nanotechnology* (english language) - N...	Q2	24	24	-	**4**
HULG2079-1	*Molecular engines and stochastic processes* - N...	Q1	16	24	-	**5**
HULG2107-1	*Nanophysics* - Pierre GASPARD, Marc HOU	Q2	24	24	-	**5**

Courses organised at the ULg

CHIM0646-1	*Physical chemistry of nanostructures* (english language) - AnneSophie DUWEZ	Q1	15	-	-	**2**
BIOC0724-1	*Chemistry of biological macromolecules*	Q2	20	-	-	**2**
ELEN0069-1	*Nanoelectronics / Optoelectronics* (english language) - Benoît VANDERHEYDEN - [40h Proj.]	Q2	30	-	[+]	**5**
PHYS3003-1	*Physics of functional oxides* (english language) - Philippe GHOSEZ	Q1	20	10	-	**4**

Course organised at the UMons

HULG0439-1	*Morphogenesis and instability* - N...	Q2	30	15	-	**4**

Courses organised at the UNamur

HULG0441-1	*Advanced theoretical chemistry* - N...	Q1	37,5	30	-	**6**

HULG9309-1	*Quantum theory of the organic solid state*	Q1	15	-	-	**3**
HULG9310-1	*Introduction to relativistic phenomena in chemistry*	Q2	15	-	-	**3**
HULG9311-1	*Nanomaterials and applications of solid state physics*	Q2	45	15	-	**6**

B. Nanofabrication, nanomanipulation, nanosynthesis

Course organised at the UCL

HULG2108-1	*Micro and nanofabrication techniques* (english language) - 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

CHIM9230-1	*Nanomaterials, (electro)synthesis and applications* (english language) - Christophe DETREMBLEUR, Christine JÉRÔME	Q1	25	-	-	**2**
SYST0020-1	*Introduction to microsystems and microtechnology* (english language) - Tristan GILET, JeanMichel REDOUTÉ - [4h Labo., 20h Proj.]	Q2	24	18	[+]	**5**
CHIM0072-2	*Nanomaterials and divided materials engineering* - Benoît HEINRICHS, Stéphanie LAMBERT	Q1	15	15	-	**3**
PHYS3037-1	*Nanofabrication : principles and techniques* (english language) - Ngoc Duy NGUYEN, Alejandro SILHANEK	Q2	25	15	-	**4**

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	*Solid surface analysis and treatment* (english language) - 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*	Q1	10	-	-	**2**
PHYS0982-1	*Physics of semiconductors* (english language) - Ngoc Duy NGUYEN	Q1	10	5	-	**2**
CHIM9266-1	*Characterization of nanostructures by scanning probe techniques* (english language) - AnneSophie DUWEZ	Q1	15	-	-	**2**
CHIM9231-1	*Characterization of Biomaterials* (english language) - Virginie BERTRAND, AnneSophie DUWEZ, Gauthier EPPE	Q1	15	15	-	**4**
PHYS0977-1	*Spectroscopy of materials* (english language)	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

HULG2081-1	*Electron microscopy, diffraction and EELS* - N...	Q1	15	15	-	**3**
HULG9312-1	*Experimental optics of surfaces and nanostructures*	Q1	22	-	-	**3**
HULG9313-1	*Microscopy applied to materials chemistry* (english language)	Q2	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	*Computational approaches to states of matter* - N...	Q1	36	24	-	**5**

Courses organised at the ULg

CHIM0090-1	*Theory and modeling of hybrid molecular complexes*	Q1	15	-	-	**3**
PHYS0976-1	*Quantum modeling of material properties* (english language)	Q1	20	10	-	**4**
PHYS3004-1	*Physics of nanomaterials* (english language) - JeanYves RATY	Q1	20	10	-	**4**

Course organised at the UMons

HULG0445-1	*Molecular modeling in chemistry* - N...	Q2	15	15	-	**3**

Course organised at the UNamur

HULG0446-1	*Simulation in materials physics* - N...	Q1	15	15	-	**3**
HULG0481-1	*Complements of quantum chemistry* - N...	Q1	15	-	-	**3**

[...] In agreement with the jury, chose courses for a total of 10 to 22 credits from the list below:

Courses organised at the UCL

HULG2085-1	*Nanobiotechnology* - N...	Q2	30	-	-	**3**
HULG0447-1	*Special electronic devices* (english language) - N...	Q1	30	30	-	**5**
HULG2111-1	*Design of Micro and Nanosystems* (english language) - Denis FLANDRE, Laurent FRANCIS, Thomas PARDOEN, JeanPierre RASKIN	Q1	30	30	-	**5**
HULG2086-1	*Macromolecular nanotechnology* (english language) - Sophie DEMOUSTIER, JeanFrançois GOHY, Alain JONAS, Bernard NYSTEN	Q2	45	15	-	**5**
HULG2112-1	*Transport phenomena in solids and nanostructures* (english language) - JeanChristophe CHARLIER, Xavier GONZE, Luc PIRAUX	Q2	30	30	-	**5**
HULG2113-1	*Lasers and Applications* - N...	Q2	45	15	-	**6**
HULG2090-1	*Chemometrics* - Bernadette GOVAERTS	Q1	22,5	15	-	**3**
HULG2104-1	*Principles of heterogeneous catalysis* - Eric GAIGNEAUX	Q1	52,5	-	-	**5**
HULG2091-1	*Statistical Quality Control* - Anne DE FRENNE, Bernadette GOVAERTS	Q1	15	5	-	**4**

Courses organised at the ULB

HULG0482-1	*Supramolecular interactions* - N...	Q2	24	24	-	**5**
HULG0449-1	*Micro- and nanobiotechnology* (english language) - N...	Q2	13	26	-	**3**
HULG0450-1	*(Multi)functional polymers* (english language) - N...	Q2	12	24	-	**3**
HULG0451-1	*Molecular engineering applied to the biomedical field* - N...	Q1	24	-	-	**2**
HULG0452-1	*Molecular and biomolecular engineering* (english language) - N...	Q2	24	12	-	**3**
HULG2116-1	*Micro tech components* - N...	TA	24	36	-	**5**

Courses organised at the ULg

PHYS0975-1	*Introduction to soft matter and complex systems* - Nicolas VANDEWALLE	Q1	30	-	-	**4**
CHIM9217-1	*Application of nanotechnology to develop new medicine* - Géraldine PIEL		10	-	-	**1**
MECA0008-1	*Microfluidics* (english language) - Tristan GILET - [16h Labo., 14h Proj.]	Q2	22	8	[+]	**5**
PHYS3023-1	*Physics of magnetic materials* (english language) - Eric BOUSQUET	Q2	20	10	-	**4**
CHIM0654-1	*Molecular devices and molecular machines*	Q2	15	-	-	**2**
CHIM9233-1	*Molecular logic* (english language) - Françoise REMACLE	Q1	25	-	-	**2**
CHIM0433-1	*Proteomics* - Marianne FILLET, Pierre LEPRINCE, Gabriel MAZZUCCHELLI	Q2	20	10	-	**3**
CHIM9216-1	*The contribution of electrochemistry to macromolecular chemistry*	Q2	10	-	-	**1**
BIOC0720-1	*Structure of biological macromolecules* - Paulette CHARLIER - [5h Mon. WS]	Q1	15	20	[+]	**4**
CHIM0637-3	*Chemistry of materials, Inorganic materials* (english language)	Q1	20	-	-	**2**
Courses organised at the UMons						
HULG0453-1	*Nanotechnology of the controlled-release formulations* - N...	Q2	15	-	-	**2**
HULG2089-1	*Introduction to Nanotechnology* - Michel WAUTELET	Q1	15	-	-	**2**
Course organised at the UNamur						
HULG2084-1	*Intermolecular interactions* (english language) - N...	Q1	15	-	-	**3**
HULG9314-1	*Nanotechnology*	Q2	15	-	-	**3**