Université Grenoble Alpes

EMNano+ Master program

2nd year program study at UGA

2nd year EMNano+ students 2020-2021

- Quantum and nanoscale engineering:

  Aggarwal Anuj, Dixit Anvesh, Greenhorn Scott, John Valentin, Khramov Egor, Kiyooka Elyjah, Nambisan Ameya Raj, Yazdanpanah Ravari Roozbeh

- Bionanotechnology:

  Acharya Atreyee, Alves da Silva Letícia, Carubio Reynaldo Jr, Kury Abi Nakhoul Issam, Mathias Rebecca Ananya, Pendse Chinmay Narendra, Stelse-Masson Sarah Nicole, Zapiain Merino Santino Jesulí

- Nanochemistry:

  Alejandre de la Barrera Iciar Irene, Braks Leonie, Chakravorty Debargha Cuevas Davila Jose Maria, Defoor Oscar

Check rapidly that UGA messages are not filtered by antispam at KUL or give us a second email adress

2nd year EMM Nano Master 2 program

Nanomaterials and nanochemistry		Quantum computing and nanoelectronics				Bionanotechnology and Nanomedicine		
Option Nanomaterials U Barcelona	Option Nanochemistry UGA Grenoble	Option Organic and molecular electronics TU Dresden, Chalmers	Option Quantum computing Chalmers	Option Quantum and nanoscale engineering UGA Grenoble	Option Nanoelectronics TU Dresden	Option Biophysics TU Dresden	Option Bionanotechnology JFU Grenoble	Option Nanopharmacotherapy U Barcelona
Specific Courses 15 ects compulsory + min 6 ects electives KU Leuven	Specific Courses 15 ects compulsory + min 6 ects electives KU Leuven	Specific Courses 15 ects compulsory + min 6 ects electives KU Leuven	Specific Courses 15 ects compulsory + min 6 ects electives KU Leuven	Specific Courses 15 ects compulsory + min 6 ects electives KU Leuven	Specific Courses 15 ects compulsory + min 6 ects electives KU Leuven	Specific Courses 15 ects compulsory + min 6 ects electives KU Leuven	Specific Courses 15 ects compulsory + min 6 ects electives KU	Specific Courses 15 ects compulsory + min 6 ects electives KU Leuven
Broadening courses 15 ects electives	Broadening courses 15 ects electives	Broadening courses 15 ects electives	Broadening courses 15 ects electives	Broadening courses 15 ects electives	Broadening courses 15 ects electives	Broadening courses 15 ects electives	Broadening courses 15 ects electives	Broadening courses 15 ects electives
Master thesis (30 ects)	Master thesis (30 ects)	Master thesis (30 ects)	Master thesis (30 ects)	Master thesis (30 ects)	Master thesis (30 ects)	Master thesis (30 ects)	Master thesis (30 ects)	Master thesis (30 ects)

Merged with ~ 40 local Master 2 students following the local international Master program in Nanosciences-Nanotechnologies.

Université Grenoble Alpes

Nano-Chemistry Speciality

Prof. Cyrille Train
Head of Nano-chemistry
cyrille.train@grenoble.cnrs.fr

Goal: complete overview from the elaboration to the applications of a large variety of nano-objects.

- **Semestre 3 – September to January 30 ECTS**

Micro-Nano Fabrication	3 ECTS
Lab. Project (lab training)	3 ECTS
Molecular assemblies for Nanoscience	6 ECTS
Inorganic Nanomaterials	3 ECTS

+ 15 ECTS Elective courses

- Polymers for Micro-Nano Electronics
- Nanocomposite Materials
- Nanosafety
- Molecular electronics and Magnetism
- Nanostructures and Energy
- Characterization of (bio-) molecular Interactions at surfaces
- Surface functionalization
- Nanostructures and Energy

- **Semestre 4 – 4/5 month full time internship**

Université Grenoble Alpes

Bionanotechnology - Speciality

Pr. Hans Geiselmann
hans.geiselmann@univ-grenoble-alpes.fr

Goal: Biosensors and micro-manufacturing techniques, modeling and data analysis in Biology

- **Semestre 3 – September to January 30 ECTS**

Nano-fabrication Laboratory	3 ECTS
Lab. Project (Lab training)	3 ECTS
Bio-sensors & micro-arrays	3 ECTS
Bio-molecular interactions: methods and applications	3 ECTS
Engineering of biomaterials:	3 ECTS

+ 15 ECTS Elective courses

- Surface functionalization
- Characterization of bio-mol. int. at surf.
- Molecular assemblies for Nanosciences
- Engineering of Biomaterials
- Molecular markers for medical imaging
- Physiology and Neurosciences
- Optics and biological systems
- Cell Signaling
- Nanosafey

- **Semestre 4 – 4/5 month full time internship**

Lots of common courses with Engineer School Phelma (biomedical track) !

Bionanotechnology - Speciality

Pr. Hans Geiselmann
hans.geiselmann@univ-grenoble-alpes.fr

Goal: Biosensors and micro-manufacturing techniques, modeling and data analysis in Biology

- **Semestre 3 – September to January 30 ECTS**

Nano-fabrication Laboratory	3 ECTS
Lab. project	3 ECTS
Bio-sensors & micro-arrays	3 ECTS
Bio-molecular interactions: methods and applications	3 ECTS
Engineering of biomaterials: 3 ECTS	

+ 15 ECTS Elective courses

- Surface functionalization
- Characterization of bio-mol. int. at surf.
- Molecular assemblies for Nanosciences
- Engineering of Biomaterials
- Molecular markers for medical imaging
- Physiology and Neurosciences
- Optics and biological systems
- Cell Signaling
- Nanosafey

- **Semestre 4 – 4/5 month full time internship**

Lots of common courses with Engineer School Phelma (biomedical track) !

Quantum and Nanoscale Engineering Speciality

Prof. David Ferrand
Head of Nano-physics
David.ferrand@neel.cnrs.fr

Goal: physics of quantum systems, elaboration and advanced characterization of nanostructures and multiscale systems

- **Semestre 3 – September to January 30 ECTS**

Micro-Nano Fabrication	3 ECTS
Lab. Project (**quantum training**)	3 ECTS
Physics & elaboration of nano-structures	3 ECTS
Quantum Nanoelectronics	3 ECTS
Quantum engineering	3 ECTS

+ 15 ECTS Elective courses

- Quantum engineering / quant. Inform.
- Nanophotonics-Nanoplasmonics
- Modeling in Nanoscience
- Nanomagnetism spintronics
- Molecular electronics
- Nanopores-nanomembranes
- Nanostructures and energy
- Nanosafety

- **Semestre 4 – 4/5 month full time internship**

Université Grenoble Alpes

Quantum and Nanoscale Engineering Speciality

Prof. David Ferrand
Head of Nano-physics
David.ferrand@neel.cnrs.fr

Goal: physics of quantum systems, elaboration and advanced characterization of nanostructures and multiscale systems

Condensed matter at ultimate scale
Quantum engineering

Quantum engineering / quantum information
Quantum Nanoelectronics
Nanophotonics, Nanoplasmonics
Nanomagnetism spintronics
Molecular electronics
Physics and elaboration of nanostructures

Nanomaterials surface and interface
Nanoscale engineering

Adhesion friction and molecular bonding
Nanopores nanomembranes
Biomaterials, bio-molecular interactions
Nanostructures and energy
Complex fluid

2nd year EMM Nano Master 2 program

- 1st Semester : **lectures** from september 2019 to January 2020
- 2nd Semester : **30 ECTS Master internship:** 4 month minimum up to 6 month maximum done from February to end of August, evaluation at the end of june or end of August

- One Master 2 course: most often 3 ECTS ~ 20-25 hours during one semester
  sometimes 6 ECTS ~ 45 hours during one semester

- To be graduated, 120 ECTS in your ISP are needed over the two years

➡ Depending on the **credit number done in Leuven** (from 54 up to 66 ECTS credits)

- Choose the number of courses **during 1st semester** in order to complete your curriculum up to 120 ECTS credits: from 24 ECTS up to 36 ECTS

- Choose only EMM Nano **courses listed in Leuven** (http://www.emm-nano.org/)

- Be careful rules are a bit **different in the 3 UGA Master 2 tracks**

Quantum and nanoscale engineering syllabus 2020-2021

- **1st Semester**: 5 compulsory specializing courses 15 ECTS
  + 15 ECTS broadening courses (more if you need more than 30 ECTS)

EMM Students Nanophysics track

Compulsory specializing courses 15 ECTS

ECTS	Leuven course title	Leuven code	UGA course title	Dates and times	Rooms	Teachers
3 ECTS	Physics and Elaboration of Nanostructures	H08Q0A	Physics and Elaboration of Nanostructures	Wednesday 9.45am 11.15am **(start 04/09)**	PHITEM A018	David Ferrand, Christophe Durand
3 ECTS	Project	H0E23A	Research Training, "Quantum simulation", training, "Quantum optics" training	Wednesday and friday afternoon (start 20/09 or after)	in Labs	Stephane Fontanell, D. Ferrand (Quantum trainings)
3 ECTS	Quantum Nanoelectronics	H0T60A	Quantum Nanoelectronics	Monday 1pm-3pm (start 09/09)	PHITEM A004	Tristan Meunier
3 ECTS	Quantum Engineering and Quantum Information	H0T65A	Quantum Engineering and Quantum Information	Tuesday 8am-10am (start 10/09)	GR 2D-006	Nicolas Roch, Alexia Auffèves, JP. Poizat
3 ECTS	Micro-Nanofabrication	H0T62A	Micro-Nanofabrication	First week courses **(start 03/09)** + Lab practicals January 2020	CEA center + clean rooms	Stephane Fontanell

Broadening courses declared in Leuven: 15 ECTS among

i) Nanophysics track broadening courses

3 ECTS	Nanomechanics: Adhesion, Friction, Direct Bonding	H0T61A	Adhesion, Friction, Direct Bonding	Wednesday 11.30am-1pm (start 04/09)	PHITEM A018	Elisabeth Charlaix
3 ECTS	Nanophotonics and Plasmonics	H0T66A	Nanophotonics and Plasmonics	Monday 8am-10am (start 09/09)	PHITEM A003	G. Bachelier, G. Nogues, JM Gérard
3 ECTS	Nanomagnetism and Spintronics	H0T67A	Nanomagnetism and Spintronics	Thursday 11.30pm 1pm (start 05/09)	GR 2D-013	H. Bea, V. Baltz
3 ECTS	Modeling in Nanosciences	H0T69A	Modeling in Nanosciences	Monday 10.15am 12.15pm (start 09/09)	PHITEM D207	G. Bachelier, D. Ferrand, E. Charlaix
3 ECTS	Nanostructures and Energy	H0T68A	Nanostructures and Energy	Thursday 9.45am-11.15am (start 05/09)	GR 2D-003	Daniel Bellet
3 ECTS	Molecular Electronics and Magnetism	H0T72A	Molecular Electronics and Magnetism	Tuesday 10.15am 12.15am (start 10/09)	GR 2D-013	C. Train, F. Balestro
3 ECTS	Nanopores and Membrane Technologies	H0T71A	Nanopores and Membrane Technologies	Monday 4.45pm-6.15pm (start 09/09)	Phitem A004	A.L Biance
3 ECTS	Nanosafety	H0T73A	Nanosafety	Thursday 1.30pm-3pm (start 12/09)	PHITEM D112	Stephane Fontanell
3 ECTS	Physics of Synchrotron Radiation	H08Q7A	Large scale facilities	Thursday 8am-9.30am (start 12/09)	GR 2D-003	Luigi Paolasini, Helmut Schober

(In white elective course proposed by the local Nanophysics Master 2 program all Toledo elective courses are listed in the next page, , dates and times are only indicative as it corresponds to study program 2019-2020).

(room code: Phitem=UGA campus, GR=Green-Er, Phelma=Phelma minatec, CEA=CEA center)

Quantum and nanoscale engineering syllabus 2020-2021: full list of broadening courses

➡ **Free choice among the full list but check timetable compatibility**

Broadening courses declared in Leuven: 15 ECTS among						
i) Nanophysics track broadening courses						
3 ECTS	Nanomechanics: Adhesion, Friction, Direct Bonding	H0T61A	Adhesion, Friction, Direct Bonding	Wednesday 11.30am-1pm (start 04/09)	PHITEM A018	Elisabeth Charlaix
3 ECTS	Nanophotonics and Plasmonics	H0T66A	Nanophotonics and Plasmonics	Monday 8am-10am (start 09/09)	PHITEM A003	G. Bachelier, G. Nogues, JM Gérard
3 ECTS	Nanomagnetism and Spintronics	H0T67A	Nanomagnetism and Spintronics	Thursday 11.30pm 1pm (start 05/09)	GR 2D-013	H. Bea, V. Baltz
3 ECTS	Modeling in Nanosciences	H0T69A	Modeling in Nanosciences	Monday 10.15am 12.15pm (start 09/09)	PHITEM D207	G. Bachelier, D. Ferrand, E.
3 ECTS	Nanostructures and Energy	H0T68A	Nanostructures and Energy	Thursday 9.45am-11.15am (start 05/09)	GR 2D-003	Daniel Bellet
3 ECTS	Molecular Electronics and Magnetism	H0T72A	Molecular Electronics and Magnetism	Tuesday 10.15am 12.15am (start 10/09)	GR 2D-013	C. Train, F. Balestro
3 ECTS	Nanopores and Membrane Technologies	H0T71A	Nanopores and Membrane Technologies	Monday 4.45pm-6.15pm (start 09/09)	Phitem A004	A.L Biance
3 ECTS	Nanosafety	H0T73A	Nanosafety	Thursday 1.30pm-3pm (start 12/09)	PHITEM D112	Stephane Fontanell
3 ECTS	Physics of Synchrotron Radiation	H08Q7A	Large scale facilities	Thursday 8am-9.30am (start 12/09)	GR 2D-003	Luigi Paolasini, Helmut Schober
ii) Other broadening courses from Nanochemistry and Nanobiotechnology tracks (check compatibility between courses)						
3 ECTS	Polymers for Micro-Nano Electronics	H09O6A	Polymers for Micro-Nano Electronics	Tuesday 1.30pm-3.30pm (start 10/09)	GR 2D-014	Said Sadki
~~3 ECTS~~	~~Nanocomposite Materials~~	~~H09O7A~~	~~Nanocomposite Materials~~	~~Tuesday 8am-10am (start 10/09)~~	~~GR 2D-013~~	~~Said Sadki~~
3 ECTS	Inorganic Nanomaterials	H0T64A	Inorganic Nanoparticules	Wednesday 8.30am-10am (start 11/09) + Practicals in January	Phitem A018	Elisabeth Djurado
3 ECTS	Surface Functionalization	H08R7A	Surface Functionalization	Monday 3.45pm 5.15pm (start 17/09)	Phelma M255 (ADE Phelma) to be	Michael HOLZINGER
3 ECTS	Microfluidics	H00U8A	Micro and Nanofluidics	Thursday 10.15am 12.15pm (start 19/09)+ practicals (monday morning)	Phelma Z305	Cyril Picard
3 ECTS	Characterization of (Bio-)Molecular Interactions at Surfaces	H08R9B	Characterization of (Bio-)Molecular interactions at Surfaces	Monday 3.15am-4.45pm (start 09/09)	PHITEM A018	Jerome Dejeu
3 ECTS	Bio-Molecular Interactions: Methods and Applications	H0A32A	Bio-Molecular Interactions: Methods and Applications	Tuesday 1.30pm-3.30pm (start 17/09)+ practicals (monday morning)	Phelma M257	Johannes Geiselmann
~~6 ECTS~~	~~Molecular Assemblies for Nanosciences~~	~~H0T63A~~	~~Molecular Nanomaterials~~	~~Monday 10.15am-12.15am, Thursday 3.15pm-5.15pm (start 12/09)~~	~~PHITEM D112~~	~~Guy Royal, Jerome Chauvin~~
3 ECTS	Biosensors and Microarrays	H08S4C	Biosensors and high through put analysis	Tuesday 1.30pm-3.30pm (start 5/11) + practicals (monday morning)	Phelma Z306	Donald Martin et al
3 ECTS	Engineering of Biomaterials and Bio-compatible Surfaces	H00U9A	Biomaterial engineering	Friday 10.30am 12.30pm (start 25/09)	GR 2D-003	Catherine Picard
3 ECTS	Molecular Markers for Medical Imaging	H0S68A	Molecular Markers	Thursday 8am-10am (start 19/09)	Phelma M257	Franz Bruckert
~~6 ECTS~~	~~Physiology and Neurosciences~~	~~H0T74A~~	~~Physiology and Neurosciences~~	~~Tuesday 9am-11am (first lecture 9.30am)~~	~~Phelma Z108~~	~~Franz Bruckert~~
~~3 ECTS~~	~~Fundamentals of Structural Biology~~	~~H0A33A~~	~~Fundamentals of Structural Biology~~	~~Monday 1.30pm-3pm (start 09/09)~~	~~PHITEM D215 (ADE Phelma)~~	~~Dominique Housset~~
3 ECTS	Optics and Biological Systems	H08R2A	Optics for Biological Systems	Thursday 3.15pm-5.15pm (start 19/09)	room at Phitem to be announced	Martial Balland
~~3 ECTS~~	~~Cell Signaling~~	~~H08R4A~~	~~Cell Signaling~~	~~Tuesday 8am-10am (start 10/09)~~	~~Phelma M254~~	~~Franz Bruckert~~
~~3 ECTS~~	~~Complex Fluids, from Nano to Macro~~	~~H0T70A~~	~~Complex Fluid~~	~~Tuesday 8.30am 10am (start 10/09)~~	~~Phitem A019~~	~~Philippe Peyla~~

(room code: Phitem=UGA campus, GR=Green-Er, Phelma=Phelma minatec, CEA=CEA center)

Nanobiotechnology syllabus 2020-2021

- **1st Semester**: 5 compulsory specializing courses 15 ECTS
  + 15 ECTS broadening courses (more if you need more than 30 ECTS)

EMM Students Nanobiotechnology track						
Compulsory specializing courses 15 ECTS						
Credits	**Leuven course title**	**Leuven code**	**UGA course title**	**Dates and times**	**Rooms**	**Teachers**
3 ECTS	Research Training	H08T8B	Research Training	Wednesday and friday afternoon (start 02/10)	in Labs	Stephane Fontanell
3 ECTS	Micro-Nanofabrication	H0T62A	Micro-Nanofabrication	First week + Lab practicals January 2020	CEA center + clean rooms	Stephane Fontanell
3 ECTS	Biosensors and Microarrays	H08S4C	Biosensors and high through put analysis	Tuesday 1.30pm-3.30pm (start 5/11) + practicals (monday morning)	Phelma Z306	Donald Martin et al
3 ECTS	Bio-Molecular Interactions: Methods and Applications	H0A32A	Bio-Molecular Interactions: Methods and Applicat	Tuesday 1.30pm-3.30pm (start 17/09)+ practicals (monday morning)	Phelma M257	Johannes Geiselmann
3 ECTS	Engineering of Biomaterials and Bio-compatible Surfaces	H00U9A	Biomaterial engineering	Friday 10.30am 12.30pm (start 25/09)	GR 2D-003	Catherine Picard
Broadening courses declared in Leuven: 15 ECTS among						
i) Nanobiotechnology track broadening courses						
3 ECTS	Surface Functionalization	H08R7A	Surface Functionalization	Monday 3.45pm 5.15pm (start 17/09)	Phelma M255 (ADE Phelma) to be confirmed	Michael HOLZINGER
3 ECTS	Characterization of (Bio-)Molecular Interactions at Surfaces	H08R9B	Characterization of (Bio-)Molecular interactions at Surfaces	Monday 3.15am-4.45pm (start 09/09)	PHITEM A018	Jerome Dejeu
3 ECTS	Microfluidics	H00U8A	Micro and Nanofluidics	Thursday 10.15am 12.15pm (start 19/09)+ practicals (monday morning)	Phelma Z305	Cyril Picard
3 ECTS	Optics and Biological Systems	H08R2A	Optics for Biological Systems	Thursday 3.15pm-5.15pm (start 19/09)	salle Phitem non réservée ?	Martial Balland
3 ECTS	Molecular Markers for Medical Imaging	H0S68A	Molecular Markers	Thursday 8am-10am (start 19/09)	Phelma M257	Franz Bruckert
6 ECTS	Physiology and Neurosciences	H0T74A	Physiology and Neurosciences	Tuesday 10.15am-12.15am (start 10/09)	Phelma M254	Franz Bruckert
3 ECTS	Fundamentals of Structural Biology	H0A33A	Fundamentals of Structural Biology	Monday 1.30pm-3pm (start 09/09)	PHITEM D215 (ADE Phelma) Phitem amphi central (ADE Phitem) ?	Dominique Housset
3 ECTS	Cell Signaling	H08R4A	Cell Signaling	Tuesday 8am-10am (start 10/09)	Phelma M254	Franz Bruckert
3 ECTS	Nanosafety	H0T73A	Nanosafety	Thursday 1.30pm-3pm (start 12/09)	PHITEM D112	Stephane Fontanell
3 ECTS	Nanopores and Membrane Technologies	H0T71A	Nanopores and Membrane Technologies	Monday 4.45pm-6.15pm (start 09/09)	Phitem A004	A.L Biance
3 ECTS	Nanomechanics: Adhesion, Friction, Direct Bonding	H0T61A	Adhesion, Friction, Direct Bonding	Wednesday 11.30am-1pm (start 04/09)	PHITEM A018	Elisabeth Charlaix

(In white elective course proposed by the local Nanobioscience Master 2 program all Toledo elective courses are listed in the next page, , dates and times are only indicative as it corresponds to study program 2019-2020)

(room code: Phitem=UGA campus, GR=Green-Er, Phelma=Phelma minatec, CEA=CEA center)

Nanobiotechnology syllabus 2020-2021: full list of broadening courses

Free choice among the full list but check timetable compatibility

Broadening courses declared in Leuven: 15 ECTS among

i) Nanobiotechnology track broadening courses

3 ECTS	Surface Functionalization	H08R7A	Surface Functionalization	Monday 3.45pm 5.15pm (start 17/09)	Phelma M255 (ADE Phelma) to be confirmed	Michael HOLZINGER
3 ECTS	Characterization of (Bio-)Molecular Interactions at Surfaces	H08R9B	Characterization of (Bio-)Molecular interactions at Surfaces	Monday 3.15am-4.45pm (start 09/09)	PHITEM A018	Jerome Dejeu
3 ECTS	Microfluidics	H00U8A	Micro and Nanofluidics	Thursday 10.15am 12.15pm (start 19/09)+ practicals (monday morning)	Phelma Z305	Cyril Picard
3 ECTS	Optics and Biological Systems	H08R2A	Optics for Biological Systems	Thursday 3.15pm-5.15pm (start 19/09)	salle Phitem non réservée ?	Martial Balland
3 ECTS	Molecular Markers for Medical Imaging	H0S68A	Molecular Markers	Thursday 8am-10am (start 19/09)	Phelma M257	Franz Bruckert
6 ECTS	Physiology and Neurosciences	H0T74A	Physiology and Neurosciences	Tuesday 10.15am-12.15am (start 10/09)	Phelma M254	Franz Bruckert
3 ECTS	Fundamentals of Structural Biology	H0A33A	Fundamentals of Structural Biology	Monday 1.30pm-3pm (start 09/09)	PHITEM D215 (ADE Phelma) Phitem amphi central (ADE Phitem) ?	Dominique Housset
3 ECTS	Cell Signaling	H08R4A	Cell Signaling	Tuesday 8am-10am (start 10/09)	Phelma M254	Franz Bruckert
3 ECTS	Nanosafety	H0T73A	Nanosafety	Thursday 1.30pm-3pm (start 12/09)	PHITEM D112	Stephane Fontanell
3 ECTS	Nanopores and Membrane Technologies	H0T71A	Nanopores and Membrane Technologies	Monday 4.45pm-6.15pm (start 09/09)	Phitem A004	A.L Biance
3 ECTS	Nanomechanics: Adhesion, Friction, Direct Bonding	H0T61A	Adhesion, Friction, Direct Bonding	Wednesday 11.30am-1pm (start 04/09)	PHITEM A018	Elisabeth Charlaix

ii) Other broadening courses proposed by Nanochemistry and Nanophysics tracks: (check compatibility between courses)

~~3 ECTS~~	~~Polymers for Micro-Nano Electronics~~	~~H09O6A~~	~~Polymers for Micro-Nano Electronics~~	~~Tuesday 1.30pm-3.30pm (start 10/09)~~	~~GR 2D-014~~	~~Said Sadki~~
~~6 ECTS~~	~~Molecular Assemblies for Nanosciences~~	~~H0T63A~~	~~Molecular Nanomaterials~~	~~Monday 10.15am-12.15am, Thursday 3.15pm-5.15pm (start 12/09)~~	~~PHITEM D112~~	~~Guy Royal, Jerome Chauvin~~
~~3 ECTS~~	~~Quantum Nanoelectronics~~	~~H0T60A~~	~~Quantum Nanoelectronics~~	~~Monday 1.pm-3pm (start 09/09)~~	~~PHITEM A004~~	~~Tristan Meunier~~
3 ECTS	Nanocomposite Materials	H09O7A	Nanocomposite Materials	Tuesday 8am-10am (start 10/09)	GR 2D-013	Said Sadki
3 ECTS	Inorganic Nanomaterials	H0T64A	Inorganic Nanoparticules	Wednesday 8.30am-10am (start 11/09) + Practicals in January	Phitem A018	Elisabeth Djurado
3 ECTS	Nanomechanics: Adhesion, Friction, Direct Bonding	H0T61A	Adhesion, Friction, Direct Bonding	Wednesday 11.30am 1pm	PHITEM D112	Elisabeth Charlaix
3 ECTS	Quantum Engineering and Quantum Information	H0T65A	Quantum Engineering and Quantum Information	Tuesday 8am-10am (start 10/09)	GR 2D-006	Nicolas Roch, Alexia Auffèves, JP. Poizat
3 ECTS	Nanophotonics and Plasmonics	H0T66A	Nanophotonics and Plasmonics	Monday 8am-10am (start 09/09)	PHITEM A003	G. Bachelier, G. Nogues, JM Gérard
3 ECTS	Nanomagnetism and Spintronics	H0T67A	Nanomagnetism and Spintronics	Thursday 11.30pm 1pm (start 05/09)	GR 2D-013	H. Bea
3 ECTS	Modeling in Nanosciences	H0T69A	Modeling in Nanosciences	Monday 10.15am 12.15pm (start 09/09)	PHITEM D207	G. Bachelier, D. Ferrand, E. Charlaix
3 ECTS	Nanostructures and Energy	H0T68A	Nanostructures and Energy	Thursday 9.45am-11.15am (start 05/09)	GR 2D-003	Daniel Bellet
3 ECTS	Molecular Electronics and Magnetism	H0T72A	Molecular Electronics and Magnetism	Tuesday 10.15am 12.15am (start 10/09)	GR 2D-013	C. Train, F. Balestro
3 ECTS	Physics of Synchrotron Radiation	H08Q7A	Large scale facilities	Thursday 8am-9.30am (start 12/09)	GR 2D-003	Luigi Paolasini, Helmut Schober
3 ECTS	Complex Fluids	H0T70A	Complex Fluid	Tuesday 8.30am 10am (start 10/09)	Phitem A019	Philippe Peyla

(room code: Phitem=UGA campus, GR=Green-Er, Phelma=Phelma minatec, CEA=CEA center)

Nanochemistry syllabus 2020-2021

- **1st Semester**: 4 compulsory specializing courses 15 ECTS
  + 15 ECTS broadening courses (more if you need more than 30 ECTS)

EMM Students Nanochemistry track							
Compulsory specializing courses 15 ECTS							
ECTS	**Leuven course title**	**Leuven code**	**UGA course title**	**Dates and times**	**Rooms**	**Teachers**	**Exam dates**
3 ECTS	Research Training	H08T8B	Research Training	Wednesday and friday afternoon	in Labs	Chantal Tardif	Orals 29/01/2018 to 02/02/2018
3 ECTS	Micro-Nanofabrication	H0T62A	Micro-Nanofabrication	First week + Lab practicals January	CEA center + clean rooms	Chantal Tardif	Exam 16/10 4pm-5pm + Practicals 08 to 12/01/2018
6 ECTS	Molecular Assemblies for Nanosciences	H0T63A	Molecular Nanomaterials	Thursday 1.30pm-3.30pm	PHITEM A120	Guy Royal, Jerome Chauvin	14/12/2017 1.30pm-3.30pm
3 ECTS	Inorganic Nanomaterials	H0T64A	Inorganic Nanoparticules	Wednesday 8am-9.30am + Practicals in January	GR-2D-006	Elisabeth Djurado	24/01/2018 9am-11am
Broadening courses declared in Leuven: 15 ECTS among							
i) Nanochemistry track broadening courses							
3 ECTS	Polymers for Micro-Nano Electronics	H09O6A	Polymers for Micro-Nano Electronics	Tuesday 1.30pm-3.30pm	GR 2D-010	Said Sadki	12/12/2017 1.30pm-3.30pm
3 ECTS	Nanocomposite Materials	H09O7A	Nanocomposite Materials	Tuesday 8am-10am	GR 2D-006	Said Sadki	19/12/2017 8am-10am
3 ECTS	Nanosafety	H0T73A	Nanosafety	Thursday 3.45pm-5.15pm	PHITEM A120	Chantal Tardif	16/01/2018 8am-10am
3 ECTS	Molecular Electronics and Magnetism	H0T72A	Molecular Electronics and Magnetism	Tuesday 10.15am 12.15am	GR 2D-006	C. Train, F. Balestro	05/12/2017 10.30am-12.30pm
3 ECTS	Nanostructures and Energy	H0T68A	Nanostructures and Energy	Thursday 9.45am-11.15am	GR 2D-003	Daniel Bellet	19/01/2018 10am-12pm
3 ECTS	Characterization of (Bio-)Molecular Interactions at Surfaces	H08R9B	Characterization of (Bio-)Molecular Interactions at Surfaces	Monday 3.15am-4.45pm	PHITEM A116	Jerome Dejeu	15/01/2018 8.15am-10.15am
3 ECTS	Surface Functionalization	H08R7A	Surface Functionalization	Monday 3.45pm 5.15pm	GR Amphi Puech	Michael HOLZINGER	23/01/2018 9am-11am
3 ECTS	Nanostructures and Energy	H0T68A	Nanostructures and Energy	Thursday 9.45am-11.15am	GR 2D-003	Daniel Bellet	19/01/2018 10am-12pm

(In white elective course proposed by the local Nanochemistry Master 2 program all Toledo elective courses are listed in the next page, dates and times are only indicative as it corresponds to study program 2019-2020)

(room code: Phitem=UGA campus, GR=Green-Er, Phelma=Phelma minatec, CEA=CEA center)

Nanochemistry syllabus 2020-2021: full list of broadening courses

i) Nanochemistry track broadening courses							
3 ECTS	Polymers for Micro-Nano Electronics	H09O6A	Polymers for Micro-Nano Electronics	Tuesday 1.30pm-3.30pm	GR 2D-010	Said Sadki	12/12/2017 1.30pm-3.30pm
3 ECTS	Nanocomposite Materials	H09O7A	Nanocomposite Materials	Tuesday 8am-10am	GR 2D-006	Said Sadki	19/12/2017 8am-10am
3 ECTS	Nanosafety	H0T73A	Nanosafety	Thursday 3.45pm-5.15pm	PHITEM A120	Chantal Tardif	16/01/2018 8am-10am
3 ECTS	Molecular Electronics and Magnetism	H0T72A	Molecular Electronics and Magnetism	Tuesday 10.15am 12.15am	GR 2D-006	C. Train, F. Balestro	05/12/2017 10.30am-12.30pm
3 ECTS	Nanostructures and Energy	H0T68A	Nanostructures and Energy	Thursday 9.45am-11.15am	GR 2D-003	Daniel Bellet	19/01/2018 10am-12pm
3 ECTS	Characterization of (Bio-)Molecular Interactions at Surfaces	H08R9B	Characterization of (Bio-)Molecular Interactions at Surfaces	Monday 3.15am-4.45pm	PHITEM A116	Jerome Dejeu	15/01/2018 8.15am-10.15am
3 ECTS	Surface Functionalization	H08R7A	Surface Functionalization	Monday 3.45pm 5.15pm	GR Amphi Puech	Michael HOLZINGER	23/01/2018 9am-11am
3 ECTS	Nanostructures and Energy	H0T68A	Nanostructures and Energy	Thursday 9.45am-11.15am	GR 2D-003	Daniel Bellet	19/01/2018 10am-12pm
ii) Other broadening courses from Nanobiotechnology and nanophysics tracks (check compatibility between courses)							
3 ECTS	Bio-Molecular Interactions: Methods and Applications	H0A32A	Bio-Molecular Interactions: Methods and Applications	Tuesday 1.30pm-3.30pm	GR 2D-013	Johannes Geiselmann	07/11/2017 1.30pm-3.30pm
3 ECTS	Biosensors and Microarrays	H08S4C	Biosensors and high through put analysis	Tuesday 1.30pm-3.30pm (start 14/11)	GR 2D-013		25/01/2018 8.30am-10.30am
3 ECTS	Engineering of Biomaterials and Bio-compatible Surfaces	H00U9A	Biomaterial engineering	Friday 10.30am 12.30pm (start 25/09)	GR 2D-003	Catherine Picard	16/01/2018 10.15am-12.15pm
3 ECTS	Molecular Markers for Medical Imaging	H0S68A	Molecular Markers	Friday 19th January + 26th January + legislation	Phelma Z103		Orals Friday 19/01 + 26/01 + legislation
6 ECTS	Physiology and Neurosciences	H0T74A	Physiology and Neurosciences	Tuesday 9am-11am (first lecture 9.30am)	Phelma Z108 ?	Franz Bruckert	19/12/2017 9am-12pm
3 ECTS	Fundamentals of Structural Biology	H0A33A	Fundamentals of Structural Biology	Monday 1.30pm-3pm	PHITEM A116	Dominique Housset	22/01/2018 9am-12pm
3 ECTS	Microfluidics	H00U8A	Micro and Nanofluidics	Thursday 10.15am 12.15pm	PHITEM A116	Cyril Picard	16/11/2017 1030am-12.30pm
~~3 ECTS~~	~~Optics and Biological Systems~~	~~H08R2A~~	~~Optics for Biological Systems~~	~~Thursday 1.30pm-3.30pm~~	~~PHITEM D112~~	~~Martial Balland~~	~~21/12/2017 1.30pm-3.30pm~~
3 ECTS	Cell Signaling	H08R4A	Cell Signaling	Tuesday 10.45am 11.15am	Phelma ???	Franz Bruckert	Exam date ?
3 ECTS	Quantum Engineering and Quantum Information	H0T65A	Quantum Engineering and Quantum Information	Tuesday 8am-10am	GR 2D-014	Nicolas Roch, Alexia Auffèves, JP. Poizat	19/12/2017 8am-10am
3 ECTS	Nanophotonics and Plasmonics	H0T66A	Nanophotonics and Plasmonics	Monday 8am-10am	PHITEM A004	G. Bachelier, G. Nogues, JM Gérard	11/12/2017 8am-10am
3 ECTS	Nanomagnetism and Spintronics	H0T67A	Nanomagnetism and Spintronics	Monday 1.30pm 3.30pm	PHITEM A018	O. fruchart	22/01/2018 9am-12pm
3 ECTS	Modeling in Nanosciences	H0T69A	Modeling in Nanosciences	Monday 10.15am 12.15pm	PHITEM D207	G. Bachelier, D. Ferrand, E. Charlaix	orals 29/01/2018 8am-12pm
3 ECTS	Molecular Electronics and Magnetism	H0T72A	Molecular Electronics and Magnetism	Tuesday 10.15am 12.15am	GR 2D-006	C. Train, F. Balestro	05/12/2017 10.30am-12.30pm
3 ECTS	Nanopores and Membrane Technologies	H0T71A	Nanopores and Membrane Technologies	Friday 10.15am-12.15pm + Monday 5pm-6.30pm	GR 2D006 + PHITEM A103	A.L Biance	18/12/2017 8am-10am
3 ECTS	Physics of Synchrotron Radiation	H08Q7A	Large scale facilities	Thursday 8am-9.30am	GR 2D-003	Luigi Paolasini, Helmut Schober	15/02/2018 8am-10am

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2nd year EMNano+ Master program: passing rules & special courses

- **First semester exams**: done in december an in January

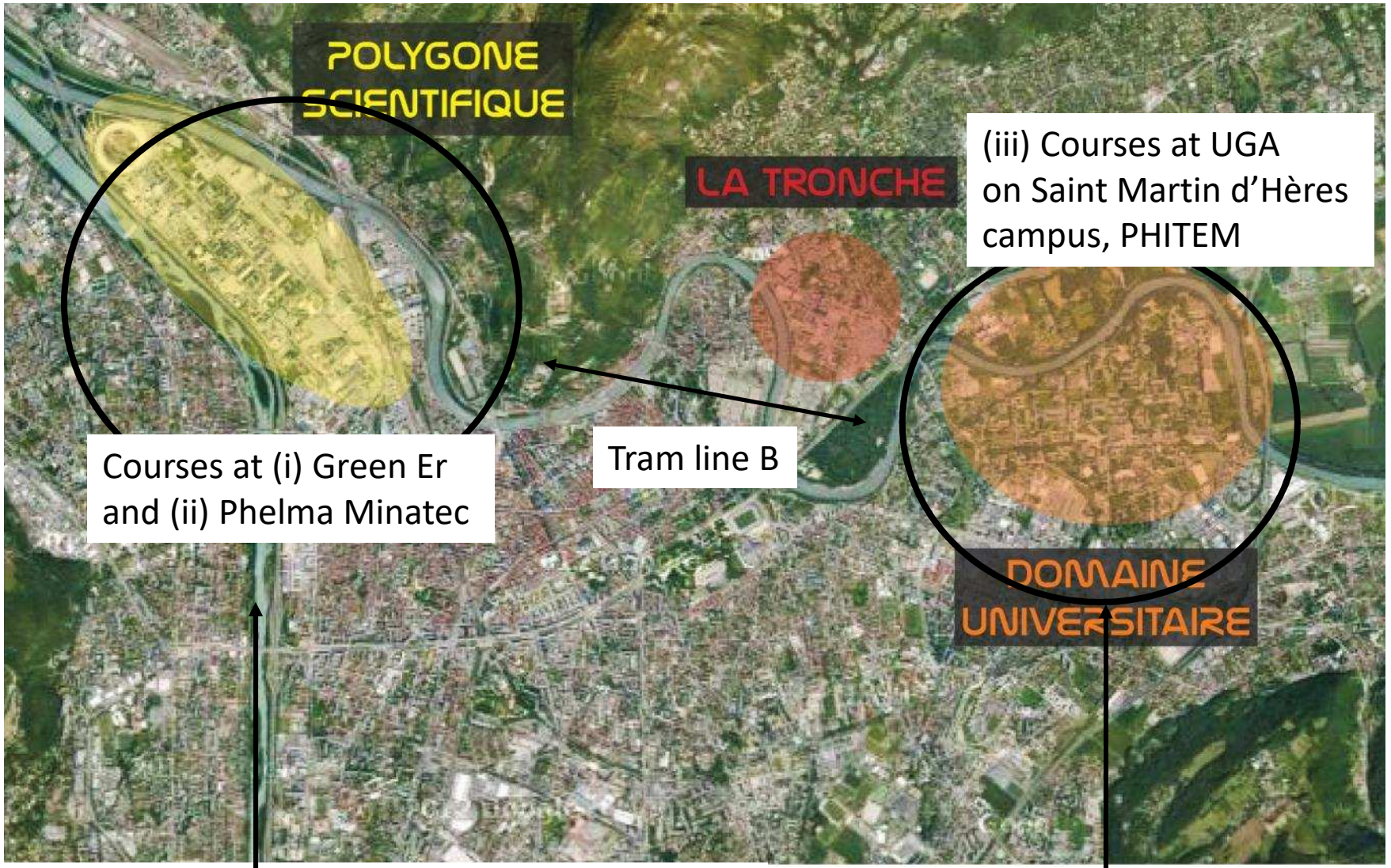
- **EMM Nano passing rules**: score to an exam should be larger than 10/20 in order to get credits

- **« Project » course:**
  - Choice 1: Nanobiology and Nanochemistry tracks: Research training
    - 10 half days spent in a research group working in Nanoscience
    - Wednesday afternoon and Friday afternoon from october to december
  - Choice 2: Quantum and nanoscale engineering track: quantum training

    Option A: Quantum algorithms and simulations
    Option B: Quantum optics training

- **French for foreigners (FLE) courses are offered to EMM students**
  - It is a not a course from EMNano+ Program and you will not have any credit for it but if you are beginner, it will help you in your everyday life.

3 different locations for the courses



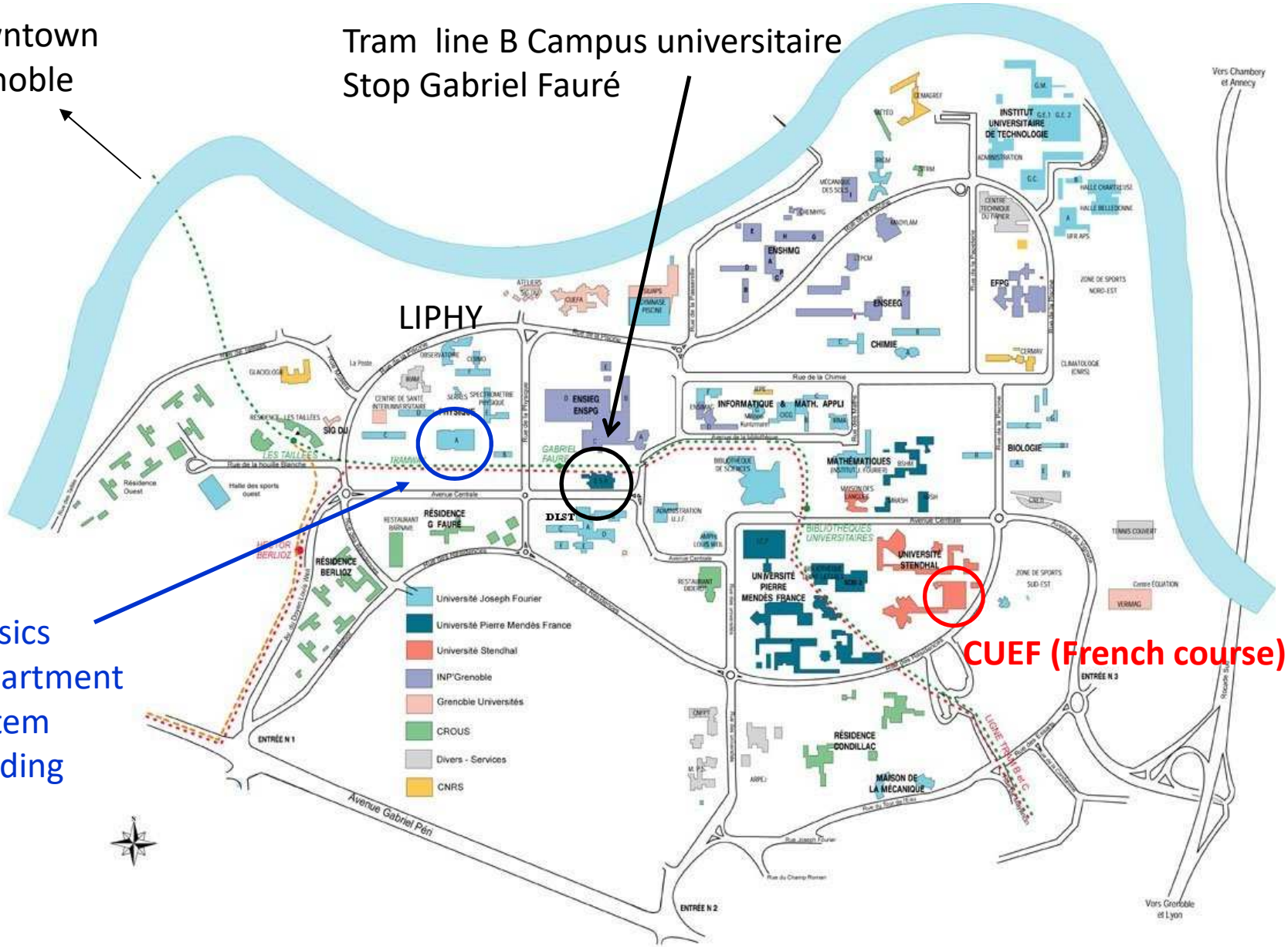
Tram stops: Cité international (Phelma Minatec)
Marie Louise Paris (Green Er,)
Oxford (Neel Institute)

Tram stop: G. Fauré (UGA campus)

UGA Campus map at Saint Martin d'Hères

Downtown Grenoble

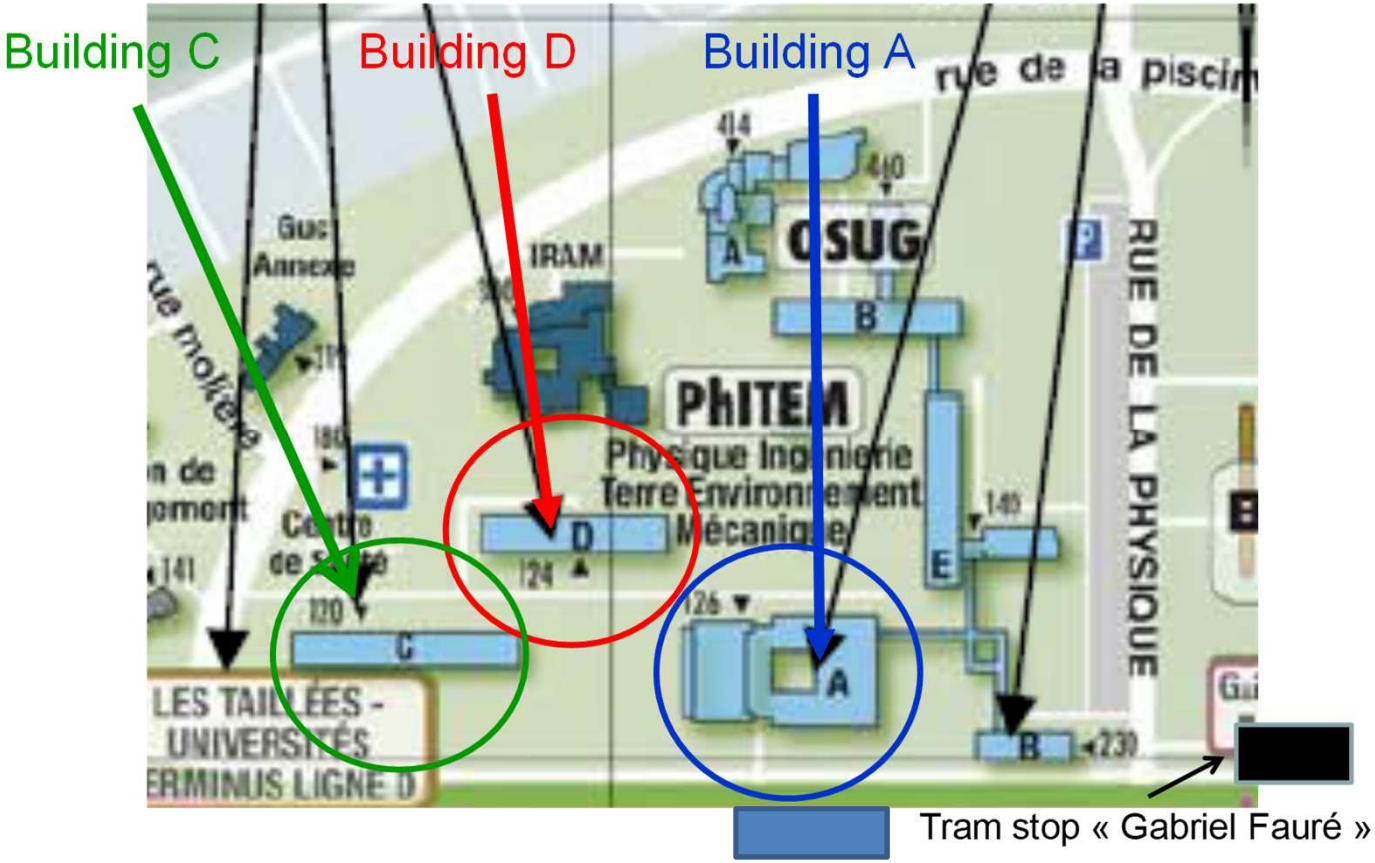
Tram line B Campus universitaire
Stop Gabriel Fauré



UGA campus: courses at Physics department (called Phitem)

Phitem buildings on Saint Martin d'Hères Campus (**SMH** in timetable)

Tram line B (green line) towards « Gières plaines des sports, stop CEA G. Fauré



contact **Dounia Moukadem**
dounia.moukadem@univ-grenoble-alpes.fr
04 76 51 48 23, office A108 (building A)

Courses at Green-Er building (scientific polygon)

Green Er building (**GR** in the timetable), 21 Avenue des Martyrs,Grenoble

Tram line B (green line) towards « Presqu'ile, stop CEA cambridge

UGA lecture rooms: 2nd floor, take the lift on the right after the entrance

Lost: contact: caroline Ben Rabey,
caroline.benrabeh@univ-grenoble-alpes.fr
04 56 52 98 95, office 2-D002

(CROUS restaurant
Located in ground floor
of the building)

Courses at Phelma minatec (Nanobiology track)

Some Nano-biotechnology courses at Phelma Minatec, 3 Parvis Louis Néel Grenoble

Tram line B (green one) towards « Oxford »
Tram Stop « Cité internationale »

(Phelma Rooms noted Mxxx or Zxxx)