

Master of Sciences in Computer Science Track “Optimization in Operations Research”

University of Nantes, Ecole des mines de Nantes

Year 2014-2015

Plan

- 1 Introduction
- 2 Program and courses
- 3 Conferences
- 4 Internship, Semester Abroad

Plan

- 1 Introduction
- 2 Program and courses
- 3 Conferences
- 4 Internship, Semester Abroad

Who, what, where?

Persons in charge

- Master ORO : **Dr. Anthony Przybylski** (Office 205)
- Internship & International : **Dr. Evgeny Gurevsky** (Office 205)
- M1 ORO : **Dr. Florian Richoux** (Office 214)
- M2 ORO : **Dr. Anthony Przybylski** (Office 205)
- EMN partner : **Dr. Fabien Lehuédé** (Office C018/EMN)

Secretary : **Ms. Marie Aubier** (Office 102)

Contact by e-mail : `firstname.lastname@univ-nantes.fr`

Except for : `fabien.lehuede@mines-nantes.fr`

Website : `http://oro.univ-nantes.fr/`

Dedicated classroom ORO : classroom Info2, Building 2

Who, what, where?

Persons in charge

- Master ORO : **Dr. Anthony Przybylski** (Office 205)
- Internship & International : **Dr. Evgeny Gurevsky** (Office 205)
- M1 ORO : **Dr. Florian Richoux** (Office 214)
- M2 ORO : **Dr. Anthony Przybylski** (Office 205)
- EMN partner : **Dr. Fabien Lehuédé** (Office C018/EMN)

Secretary : **Ms. Marie Aubier** (Office 102)

Contact by e-mail : `firstname.lastname@univ-nantes.fr`

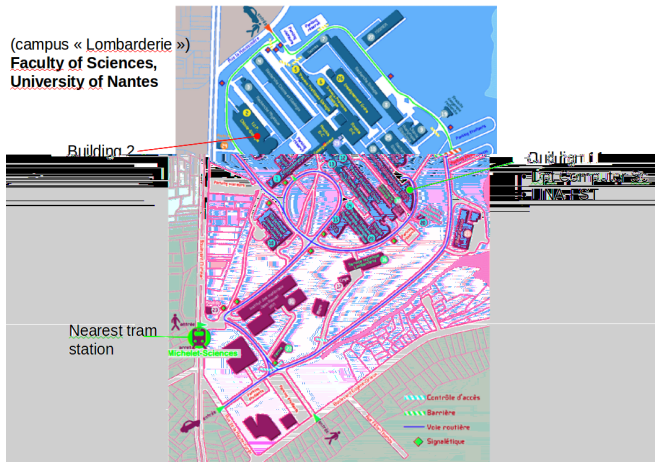
Except for : `fabien.lehuede@mines-nantes.fr`

Website : `http://oro.univ-nantes.fr/`

Dedicated classroom ORO : classroom Info2, Building 2

Map of the Faculty of Sciences

http://www.univ-nantes.fr/adminsite/photo.jsp?ID_PHOTO=75



ID Card

- Master of Sciences in Computer Sciences
Track “Optimization on Operations Research” (ORO)
- Graduated with **Research training** or **Applied training**
- **International** label
- AERES Examination : **A**

- The diploma is **shared with EMN** school of engineers
- Master program based on **strong regional scientific competences in optimization**
- Academic staff from **UN-FST, EMN, CNRS, UBS, ULB**
- Built on two research laboratories : **LINA and IRCCyN**

ID Card

- Master of Sciences in Computer Sciences
Track “Optimization on Operations Research” (ORO)
- Graduated with **Research training** or **Applied training**
- **International** label
- AERES Examination : **A**

- The diploma is **shared with EMN** school of engineers
- Master program based on **strong regional scientific competences in optimization**
- Academic staff from **UN-FST, EMN, CNRS, UBS, ULB**
- Built on two research laboratories : **LINA and IRCCyN**

ID Card

Semesters

- Structured in **2 years**, i.e. **4 semesters**, S1, S2, S3, S4
- Courses at the **Faculty of Sciences, University of Nantes** and at the **EMN**
- **Lectures in English** S3 and S4
- **Research** or **Applied Internship** during semester S4
- Semester **S2 or S4 abroad** mandatory
- Selection at the M1 entrance.

Specific Equipment for the Master ORO

Classroom Info2 “dedicated” to the Master ORO

- TP ORO M1 and M2
- TER M1
- Projects (practice courses)
- Master Thesis M2

Environment

- 9 desktops under linux, laser printer
- Optimization software
- Reference books used in your courses

Plan

- 1 Introduction
- 2 Program and courses
- 3 Conferences
- 4 Internship, Semester Abroad

Semester 1 at Nantes

Program S1

Code	Course	Lecturer(s)	CM/TD/TP
X7IO010	Integer Programming	X. Gandibleux, A. Przybylski	22/22/16
X7IO020	Graphs and Networks	I. Rusu	16/16/16
X7IO050	Metaheuristics	X. Gandibleux	8/8/8
X7IO060	OR Special Topic I	E. Gurevsky, S. Oussedik (IBM)	8/8/8
X7IO070	NonLinear Optimization	G. Chabert (EMN)	8/8/8
X7IO080	Decision Engineering	E. Gurevsky	8/8/8
X7II040	Communication Skills	S. Lyons	0/12/0
X7II050	Scientific English 1	A. Townend	0/36/0
X9IO110	Conferences	-	0/26/0

Semester 1 at Nantes

M1 ORO 2012-2013

Emploi du temps
 premier semestre

04/09/2014
 18:24:28

SEMAINES	37	38	39	40	41	42	43	44	45	46	47	48	49	
LUNDI	8h													
	9h30	X710828-CH	X710828-CH	X710828-CH	X710828-CH	X710828-CH	X710828-CH	X710880-CH						
	11h	X710828-CH	X710828-CH	X710828-CH	X710828-CH	X710828-CH	X710828-CH	X710880-TD						
	14h		X710880-CH	X710880-CH	X710880-CH	X710880-CH	X710880-CH	X710880-TPA	X710880-TPA		X710858-CH	X710858-CH	X710858-CH	
	15h30		X710880-TD	X710880-TD	X710880-TD	X710880-TD	X710880-TD	X710880-TPA	X710880-TPA		X710858-CH	X710858-CH	X710858-CH	
	17h							X710880-TPA						
18h30														
MARDI	8h													
	9h30	X710816-CH	X710816-CH	X710816-CH	X710816-CH	X710816-CH	X710816-CH	X710816-TPA	X710816-TPA		X710818-TPA	X710858-TD	X710858-TD	
	11h	X710816-CH	X710816-CH	X710816-CH	X710816-CH	X710816-CH	X710816-CH	X710816-TPA	X710816-TPA		X710818-TPA	X710858-TD	X710858-TD	
	14h	X710816-TD	X710816-TD	X710816-TD	X710816-TD	X710816-TD	X710816-TD	X710818-TPA	X710818-TPA	11/11/14	X710818-TPA	X710858-TPA	X710858-TPA	
	15h30	X710816-TD	X710816-TD	X710816-TD	X710816-TD	X710816-TD	X710816-TD	X710818-TPA	X710818-TPA		X710818-TPA	X710858-TPA	X710858-TPA	
	17h							X710818-TPA	X710818-TPA		X710818-TPA	X710858-TPA	X710858-TPA	
18h30														
MERCREDI	8h		X711846-TD	X711846-TD	X711846-TD	X711846-TD	X711846-TD		X711846-TD		X711846-TD	X711846-TD	X711846-TD	
	9h30				X710818-CH	X710818-CH	X710818-CH	X710818-CH	X710818-CH					
	11h				X710818-CH	X710818-CH	X710818-CH	X710818-CH	X710818-CH					
	14h	X710828-TD	X710828-TD	X710828-TD	X710828-TD	X710828-TD	X710828-TD	X710828-TPA	X710828-TPA	X710828-TPA	X710828-TPA	X710828-TPA	X710828-TPA	
	15h30	X710828-TD	X710828-TD	X710828-TD	X710828-TD	X710828-TD	X710828-TD	X710828-TPA	X710828-TPA	X710828-TPA	X710828-TPA	X710828-TPA	X710828-TPA	
	17h													
18h30														
JEUDI	8h													
	9h30		X710868-CH	X710868-CH	X710868-CH	X710868-CH	X710868-TPA		X710868-CH		X710868-CH			
	11h		X710868-TD	X710868-TD	X710868-TD	X710868-TD	X710868-TPA		X710868-TD		X710868-TD			
	14h							Journée d'orientation		Forum Tête de l'emploi				
	15h30								X710868-CH			X710868-CH		
	17h								X710868-TPA			X710868-TPA		
18h30														
VENDREDI	8h		X710878-CH	X710878-CH										
	9h30		X710878-CH	X710878-CH		X710878-TD	X710878-TD	X710878-TD	X710878-TPA	X710878-TPA		X710878-TPA		
	11h		X710878-CH	X710878-CH		X710878-TD	X710878-TD	X710878-TD	X710878-TPA	X710878-TPA		X710878-TPA		
	14h	X711858-TD	X711858-TD	X711858-TD	X711858-TD	X711858-TD	X711858-TD	X711858-TD	X711858-TD	X711858-TD	X711858-TD	X711858-TD	X711858-TD	
	15h30	X711858-TD	X711858-TD	X711858-TD	X711858-TD	X711858-TD	X711858-TD	X711858-TD	X711858-TD	X711858-TD	X711858-TD	X711858-TD	X711858-TD	
	17h										X711858-TD	X711858-TD	X711858-TD	
18h30														
SAMEDI	8h													
	9h30													

X711040	Techniques de communication	00 / 12 / 00	Hareschal
X711050	Anglais 1	00 / 35 / 00	lowmend
X710910	Integer Programming	22 / 22 / 16	Gandibleux / Przybylski
X710020	Graphs and Networks	16 / 16 / 16	Rusu
X710050	Metaheuristics	08 / 08 / 08	Gandibleux
X710060	OR Special topic 1	08 / 08 / 08	Gurevsky / Oussedik
X710070	Non Linear Optimization	16 / 16 / 16	Chabert
X710080	Decision Engineering	16 / 16 / 16	Gurevsky

Semester 2 at Nantes

Code	Course	Lecturer(s)	CM/TD/TP	ECTS
X8II030	Introduction to Research	-	-	5
X8II031	Research methodology	C. de la Higuera	12/0/0	-
X8II032	Research project	-	Semester 2	-
X8II040	Entrepreneurship	Sandra Berger	0/12/0	1
Options (must reach 24 ECTS)				
X8II050	Scientific English	A. Townend	0/36/0	3
X8II060	Constraint Programming	L. Granvilliers	8/8/8	3
X8II070	Multicore Programming	F. Goulard	8/8/8	3
X8II090	Machine learning	C. de la Higuera	24/18/06	6
X8II110	Data Structures and Algorithms	G. Fertin	8/8/8	3
X8II120	Computability and complexity	G. Fertin	8/8/8	3
X8II130	User Interface Design	E. Languénoù	18/12/18	6
X8IA020	Compilation	M. Oussalah	48	6
X8IA030	Logiciel extensible	G. Ardourel	48	6
TBA (EMN)	Gestion des opérations	O. Péton	45	6
TBA (EMN)	Langages et techniques de modélisation	Ph. David	45	6
Free Options				
X8II100	Summer Internship	-	summer	-

Semester 2 abroad

Program S2 abroad : Bilateral Erasmus agreements

- Université Libre de Bruxelles, Belgium (CS-oriented, **En**),
- Université de Mons, Belgium (CS-oriented, **Fr**),
- TU Kaiserslautern, Germany (Math-oriented, **En**),
- TU Berlin, Germany (Math-oriented, **En**),
- TED University-Ankara, Turkey (Indus. eng.-oriented, **En**)

Double diploma with ULB only

Free to choose your courses in "Optimization and Algorithms".
Must validate 30 ECTS.

<http://www.ulb.ac.be/facs/sciences/info/master.html>

Semester 2 abroad

Program S2 abroad : Bilateral Erasmus agreements

- Université Libre de Bruxelles, Belgium (CS-oriented, **En**),
- Université de Mons, Belgium (CS-oriented, **Fr**),
- TU Kaiserslautern, Germany (Math-oriented, **En**),
- TU Berlin, Germany (Math-oriented, **En**),
- TED University-Ankara, Turkey (Indus. eng.-oriented, **En**)

Double diploma with ULB only

Free to choose your courses in "Optimization and Algorithms".
Must validate 30 ECTS.

<http://www.ulb.ac.be/facs/sciences/info/master.html>

Semester 2 abroad

Program S2 abroad : Bilateral Erasmus agreements

- Université Libre de Bruxelles, Belgium (CS-oriented, **En**),
- Université de Mons, Belgium (CS-oriented, **Fr**),
- TU Kaiserslautern, Germany (Math-oriented, **En**),
- TU Berlin, Germany (Math-oriented, **En**),
- TED University-Ankara, Turkey (Indus. eng.-oriented, **En**)

Double diploma with ULB only

Free to choose your courses in "Optimization and Algorithms".
Must validate 30 ECTS.

<http://www.ulb.ac.be/facs/sciences/info/master.html>

Semester 2 abroad

Program S2 abroad : Bilateral Erasmus agreements

- Université Libre de Bruxelles, Belgium (CS-oriented, **En**),
- Université de Mons, Belgium (CS-oriented, **Fr**),
- TU Kaiserslautern, Germany (Math-oriented, **En**),
- TU Berlin, Germany (Math-oriented, **En**),
- TED University-Ankara, Turkey (Indus. eng.-oriented, **En**)

Double diploma with ULB only

Free to choose your courses in “Optimization and Algorithms”.
Must validate 30 ECTS.

<http://www.ulb.ac.be/facs/sciences/info/master.html>

Plan

- 1 Introduction
- 2 Program and courses
- 3 Conferences**
- 4 Internship, Semester Abroad

Conferences

- Thursday weeks 40-50
- Talks announced on the website (<http://oro.univ-nantes.fr/>)
- Topics covered
 - Case study
 - Optimization technologies
 - Optimization software
 - ...
- Talks given by
 - Software companies (Google, IBM...)
 - Consulting companies (Eurodecision...)
 - Integrators of solutions (Amadeus...)
 - Users of solutions (Renault...)
 - Academics (juniors, seniors)

Conferences

- Thursday weeks 40-50
- Talks announced on the website (<http://oro.univ-nantes.fr/>)
- Topics covered
 - Case study
 - Optimization technologies
 - Optimization software
 - ...
- Talks given by
 - Software companies (Google, IBM, ...)
 - Consulting companies (Eurodecision, ...)
 - Integrators of solutions (Amadeus, ...)
 - Users of solutions (Renault, ...)
 - Academics (juniors, seniors)

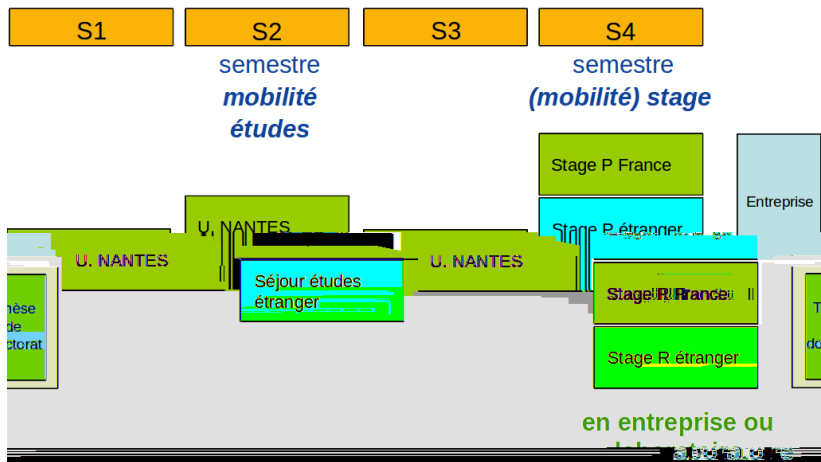
Conferences

- Thursday weeks 40-50
- Talks announced on the website (<http://oro.univ-nantes.fr/>)
- Topics covered
 - Case study
 - Optimization technologies
 - Optimization software
 - ...
- Talks given by
 - Software companies (Google, IBM...)
 - Consulting companies (Eurodecision...)
 - Integrators of solutions (Amadeus...)
 - Users of solutions (Renault...)
 - Academics (juniors, seniors)

Plan

- 1 Introduction
- 2 Program and courses
- 3 Conferences
- 4 Internship, Semester Abroad

Séjour à l'étranger



Potential financial support

1 Envoléo (Pays de la Loire)

- Condition 1 : minimum 5 months abroad mandatory during the master
- Condition 2 : spent 1 year before at a University of the region Pays de la Loire
- Amount : 1000 euros/stay

2 Erasmus (study)

- Condition : hosted by an university partner of the master ORO
 - Université Libre de Bruxelles (BE) - 3 teams
 - Université de Mons (BE)
 - Universität Kaiserslautern (DE) - 2 teams
 - Technische Universität Berlin (DE)
 - University of Coimbra (PG)
 - TED University (TU)
- Amount : 200 euros/month

3 International mobility support (for french students)

- Condition : based on social criteria
- Amount : 1500 euros/stay