WELCOME – **Master 2 CSN**

Computer Science for Networks

Dear Students,

Please **mute your microphone** and **switch off your camera** (reducing the bandwidth) – Thank you very much.

Feel free to use the chatbox for any question.

We will start in few minutes.

Thank you,
Stephane Maag

WELCOME

Master 2 CSN

Computer Science for Networks

Stephane.Maag@telecom-sudparis.eu

Palaiseau / Office 4A 237

SLIDES AND INFO available here: http://www-public.imtbs-tsp.eu/~maag/csn.html

Responsibles / contacts

- **Prof. Stephane Maag**
  - **M2 CSN Program Director**
  - **4A 237 (Palaiseau)**

- **For any questions concerning "administrative and social life" purposes:**
  - **Mrs Sujun CHEN (for the DNM M2 CSN IP Paris)**

4A 476 (Palaiseau)
sujun.chen@telecom-sudparis.eu

  - **Mrs Marie-Christine LAVIOLETTE (for the TSP MSc M2 CSN)**

A05 (Evry)
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Program

- Why CSN?
  - Want to understand, analyze and improve your communication network?
  - Want to develop and define software on top of next-generation networks?

The Master CSN

- helps students acquire advanced techniques and specialized tools,
- combines recent approaches based on advanced software engineering towards complex networks,
- emphasizes research preparation and experience being a chance to lay the groundwork for pursuing a **PhD**, as well as leading to research **engineer** positions in academic or industrial organizations.

This program focuses on rigorous coursework, technical training, specialized research, and expert faculty mentorship.

➔ **RESEARCH ORIENTED !!**

But do not be afraid!

- 1 year program in computer science & networks:
  - One semester of lectures, courses, labs and projects
  - One semester for your Master thesis

M2 CSN Courses: 30 credits + Master thesis: 30 credits

Mandatory courses	ECTS	#hours
Simulation and Metrology	2.5	21
Middleware for distributed Applications	5	42
Introduction to Research	5	42
Virtualization: Concept and implementation	2.5	21
TOTAL=	**15**	
Optional Courses		
Algorithm analysis and Computational complexity (TH+SW)	2.5	21
~~Dynamic, autonomic and self-adapting systems (TH)~~	~~2.5~~	~~21~~
Computational Logic: Artificial Intelligence To Zero Bugs (TH)	4	36
Network Security and Privacy (N)	5	42
Network Science and Graph Learning (N+TH+SW)	4	30
Formal System Testing (N+TH)	2.5	21
Wireless network and IoT (N)	5	42
Software Model based Testing (SW)	2.5	21
Global Labs for Industry-driven Software (SW)	6	42
Formal Verification (TH)	2.5	21
Machine Learning for Computer Networks and Services (N+SW)	4	35
Algorithms for dynamic and reconfigurable distributed systems (TH)	2.5	21
French / FLE	2.5	42

15 ECTS

Min 15 ECTS to choose

Not all the courses will open.

It depends on the number of students registered in it.

« Choose at least 15 credits »

- You can choose more than 15 credits:
  - if you fail some of them (next slide) but finally succeed others to cumulate 15 credits at the end, this is sufficient.
  - if you pass several exams and obtain more than 15 credits ➔ only the best grades (or the ones of your choice) could be mentioned on the transcripts (to reach at least 60 ECTS with the Master thesis).

ECTS Validation and diploma

The M2 CSN follows the following ECTS regulations :

- **For each modules:**
  - Grade ≥ 10 ➔ credits provided
  - [Grade ≥ 7/20 **and** <10/20] + [final average (semester pass mark) ≥ 10]
    - ➔ the graded module is adjourned (no credits but 'compensable') + credits of other courses provided for the semester ➔ importance of choosing > 15 credits
    - ➔ You can refuse the credits (should be notified to Prof Stephane Maag by email) and do the 2nd exam session of the graded module(s)
  - Grade <7/20 ➔ NO credits (not 'compensable') and second exam session!

- **All modules propose a 2nd exam session EXCEPT the Global Labs, Internship and the research project.**

1- http://www-public.imtbs-tsp.eu/~maag/Reglement-des-etudes-des-masters-IP-Paris-2020-2021-GB.pdf

Courses and their assessment

- **Ways of courses evaluation:**
  - **Written exams**
  - **Projects**
  - **Oral presentations**
  - **Written reports**

The assessment method will be mentioned by the courses' coordinators themselves.

Modules coordinators

Simulation and Metrology	Pr Michel Marot	
Middleware for distributed Applications	Dr Georgios Bouloukakis	
Virtualization: Concept and implementation	Dr Aravinthan Gopalasingham (NOKIA)	
Introduction to Research	Dr Natalia Kushik	

Modules coordinators

Network Security and Privacy	Dr Nesrine Kaaniche	
Network Analysis and Modeling	Dr Vincent Gauthier	
Formal System Testing	Pr Stephane Maag	
Wireless network and IoT	Dr Badii Jouaber	
Software Model based Testing	Dr Natalia Kushik	
Global Laboratory for Industry-Driven Software Development	Dr Paul Gibson	
Algorithm analysis and Computational Complexity	Dr Natalia Kushik	
Machine Learning for Computer Networks and Services	Dr Andrea Araldo	
French	Isabelle Lallemand	

Modules coordinators

Dynamic, autonomic and self-adapting systems	Ada Diaconescu (TP)	
Computational Logic	Samuel Mimram (X)	
Formal Verification	Rabea Ameur-Boulifa (TP)	
Algorithms for dynamic and reconfigurable distributed systems	Petr Kuznetsov (TP)	

French (FLE) & Global Labs

2 specific optional modules.

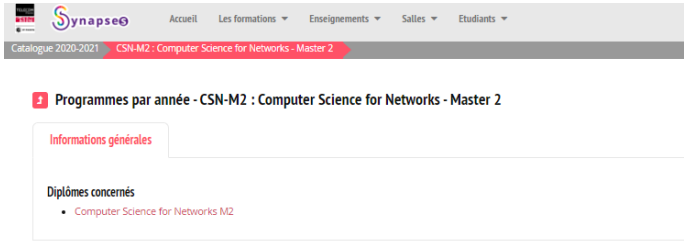
- **French – All Thursday afternoon**
  - **For non-French speakers ONLY**
- **Global Labs**
  - **Intensive software-driven courses**
  - **Work @home**
  - **With international students from other hubs/universities**
  - **European Accreditation possible**

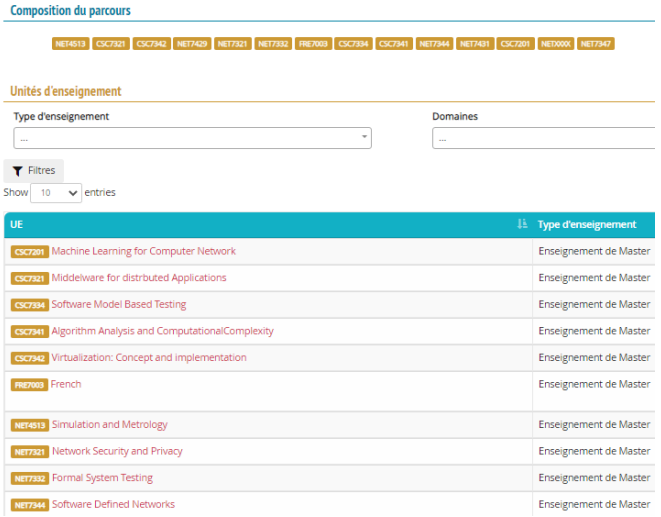
Planning - Agenda

- **Available on Synapses:**

https://synapses.telecom-paris.fr/

Tell me if not accessible for you !!





Master Thesis

- A 6 months research oriented training period performed in an industrial or academic organization (research Lab),
- Objective for students to get a first experience in research,
- Some Master Thesis proposed in the TSP SAMOVAR research lab (please feel free to contact the researchers or Stephane Maag)
  - the best choice to apply for a PhD thesis afterwards!

- **WARNING: finding a Master Thesis may take time!**

- When found, send the internship proposal to Stephane MAAG for VALIDATION.

- Internship offers are available on the "serveur des stages" ('internships server', with your login/pwd): stages.tem-tsp.eu
  - But we recommend to USE ALL MEDIA! *(➔ I will send you an exhaustive list soon)*

Administrative Staff: Mrs Françoise Guiheneuc & Mrs Marie NGAMI

Master Thesis

Master Thesis Report:

- I encourage all of you to use a Latex format *(I'll send you the template)*
- The length of the document should be < 60 pages (annexes, ref and biblio excluded).
- Content:
  - The most important sections are **'your mission'** (your work! what you did) **and** the **state of art**.
  - Context and Problematics you tackled.
  - The "company profile" or the Lab.
- A template and other info will be sent to you in March.

Documentation – Library

- Books reserved for you in TSP's library:
  - Get books at the beginning of each semester
  - Get them back at the end of each semester
- Books as support for some lectures
- Books might be shared between students

- **Numerical resources available** [mediatheque] **!! (IEEE, Elsevier, etc.)**
- **Google scholar!**

Médiathèque https://mediatheque.imtbs-tsp.eu/

Appointments and feedback

- **Questions & Appointments:**
  - **Do not hesitate to ask me** (or Sujun, Marie-Christine, Marie) **for an appointment before problems occur or in case you need it!**
  - **Most requests may be asked by emails, do not hesitate.**

- **Master communication:**
  - **Number of information is sent by email, so please check regularly your TSP email boxes.**

Document attesting your success: Oct 2024 (after your master defense)

Real Diploma (hard copy) delivered around March 2025.

Two events soon

- Do not forget:

Thursday Sept. 7th, 8.30am-5pm:

Telecom SudParis/TP Masters Welcome Day

(amphi Thevenin, Palaiseau)

Tuesday Oct. 6th, 9am-5pm:

JWOC event (Junior Conference on Wireless and Optical Communications)

(amphi Rose Dieng Kuntz, Palaiseau)

Questions?

We wish you a pleasant academic, scientific and personal stay in France, Télécom SudParis and IP Paris.