

# The Transition Institute 1.5

The ambition for an actual transition

## ACADEMIC TRACK

### ELIGIBILITY REQUIREMENTS

#### TTI.5-ACCREDITED COURSES

As part of this track, during the 2nd and 3rd years of their civil engineering studies, students must take TTI.5 -accredited specialized courses (see table on pages 2 & 3), amounting to a minimum of 16 ECTS. They can opt to do a Master's degree in parallel, also TTI.5-accredited (see page 4).

#### RELATED IN-DEPTH EXPERIENCE

Students must carry out either a term of research or an internship (either as a break from studies or during the end-of study period) on the theme of the low-carbon transition. This part represents 15 ECTS and must be validated by the institute.

#### CONTRIBUTIONS TO THE TTI.5 COMMUNITY

Contributions to the community can take different forms. Students must make at least two contributions from the following list:

- Contributions to the community can take different forms. Students must make at least two contributions from the following list:
- Write and publish a summary note
- Produce a video or podcast
- Organize an event related to TTI.5
- Give a presentation at a TTI.5 conference
- Contribute to the TTI.5 blog
- Write up the minutes of TTI.5 seminars
- Work on a computer project as part of EU 22
- ...

### A NEW RESEARCH INSTITUTE

The Transition Institute 1.5, 1.5 to echo the temperature target put forward by the IPCC, is an initiative launched by Mines Paris – PSL with the support of its Foundation. The ambition of this institute, dedicated to designing the low-carbon transition, is to provide informed scientific responses to the major challenge of carbon neutrality.

### TTI.5 SCIENTIFIC PROGRAM RESEARCH FOCUSES

FOCUS 1: The Transition Design

FOCUS 2: An electric planet?

FOCUS 3: The inclusive planet

FOCUS 4: The planet as an area of influence

### THE ACADEMIC TRACK

The TTI.5 academic track is aimed at civil engineering students at Mines Paris – PSL. The track comprises a set of courses and involves related in-depth experience and contributions to the TTI.5 community.

Students put together their individual project using a document that they can download from the TTI.5 website and which must then be validated by the Institute.



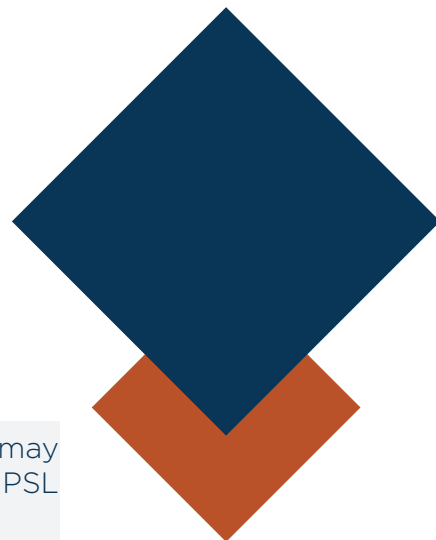
## TTI.5-accredited specialized courses 2022-2023

This non-exhaustive list is given for information only. Other courses may be added. Note that additional courses from the TTI.5-accredited PSL and Athens week will be communicated at a later date.

Code	Course title	Department	T/S*	Bloc	ECTS
<b>2A</b>					
ES2A_EEP-01	Conception de procédés 1	Energétique et Procédés	T1	H-T1	2
ES2A_EMS-01	Recherche opérationnelle	Economie, Management, Société	T1	H-T1	2
ES2A_EEP-03	Conception de procédés 2	Energétique et Procédés	T2	H-T2	2
ES2A_EMS-02	Economie industrielle	Economie, Management, Société	T2	H-T2	2
ES2A-MES-05	Statistiques mathématiques	Mathématiques et Systèmes	T2	H-T2	2
ES2A_STE-01	Risques naturels	Sciences de la Terre & Environnement	T3	H-T3	2
<b>3A</b>					
ES3A_EMS-01	Conception et dynamique des organisations	Economie, Management, Société	S5	BLOC 5A	2
ES3A_PHY-01	Physique Nucléaire	Physique	S5	BLOC 5A	2
ES3A_EEP-01	Systèmes énergétiques	Energétique et Procédés	S5	BLOC 5A	2
ES3A_EMS-02	Institutions politiques	Economie, Management, Société	S5	BLOC 5B	1
ES3A_EMS-03	Introduction to value creation in industry	Economie, Management, Société	S5	BLOC 5B	1
ES3A_STE-01	Dynamique des climats	Sciences de la Terre & Environnement	S5	BLOC 5C	1
ES3A_EMS-04	Ethique des multinationales : responsabilité dans les relations nord-sud	Economie, Management, Société	S5	BLOC 5C	1
ES3A_PHY-04	Génie Atomique Avancé	Physique	S6	BLOC 6A	2
ES3A_STE-02	Gestion de la ressource en eau dans un monde en évolution	Sciences de la Terre & Environnement	S6	BLOC 6A	2
ES3A_EEP-02	Hydrogène pour l'énergie	Energétique et Procédés	S6	BLOC 6A	2
ES3A_EMS-05	Sociologie des marchés	Economie, Management, Société	S6	BLOC 6A	2
ES3A_EMS-06	Economie des matières premières	Economie, Management, Société	S6	BLOC 6B	1
ES3A_MEM-04	Corrosion et durabilité des structures	Mécanique et Matériaux	S6	BLOC 6C	1
ES3A_EMS-08	Finance d'entreprise	Economie, Management, Société	S6	BLOC 6C	1
<b>MIXTE</b>					
ESMI_EMS-01	Economie de l'environnement et du climat	Economie, Management, Société	S3/S5	01-V-MIXTE-SEPT	2
ESMI_EMS-02	Econométrie et analyse des données en sciences sociales	Economie, Management, Société	S3/S5	01-V-MIXTE-SEPT	2
ESMI_EEP-01	Introduction to power system analysis	Energétique et Procédés	S3/S5	01-V-MIXTE-SEPT	2
ESMI_STE-01	Géologie pour AST 2A	Sciences de la Terre & Environnement	Imposé	01-V-MIXTE-SEPT	2
ESMI_EMS-03	Technology and Innovation Strategy	Economie, Management, Société	S3/S5	02-V-ATHENS-NOV	2
ESMI_EMS-13	Circular Economy and Eco-design : "Urban mine" case	Economie, Management, Société	S3/S5	02-V-ATHENS-NOV	2
ESMI_MES-02	Geostatistics	Mathématiques et Systèmes	S3/S5	02-V-ATHENS-NOV	2
ESMI_MEM-01	Physics and Mechanics of Random Media	Mécanique et Matériaux	S3/S5	02-V-ATHENS-NOV	2

\* T/S : T/S Term/Semester

\*\* TR : RT: Research Term



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Code	Course title	Department	T/S*	Bloc	ECTS
<b>MIXTE</b>					
ESMI_MEM-02	Design, Processing, and Functionality of Polymeric Materials	Mécanique et Matériaux	S3/S5	02-V-ATHENS-NOV	2
ESMI_STE-02	Regional Oceanography of the Planetary Ocean	Sciences de la Terre & Environnement	S3/S5	02-V-ATHENS-NOV	2
ESMI_EMS-04	Eco-conception	Economie, Management, Société	S3/S5	03-V-PSL-NOV	2
ESMI_EMS-16	Marchés financiers : dynamiques, mesure de risques et tarification	Economie, Management, Société	S3/S5	03-V-PSL-NOV	2
ESMI_EMS-05	Systèmes de production et de logistique	Economie, Management, Société	S3/S5	03-V-PSL-NOV	2
ESMI_EEP-02	Efficacité Energétique des Systèmes	Energétique et Procédés	TR**	03-V-PSL-NOV	2
ESMI_EEP-05	Transition Energétique	Energétique et Procédés	TR**	03-V-PSL-NOV	2
ESMI_MEM-03	Design de matériaux pour les nouveaux défis	Mécanique et Matériaux	TR**	03-V-PSL-NOV	2
ESMI_PHY-04	Génie atomique	Physique	S3/S5	03-V-PSL-NOV	2
ESMI_STE-03	Milieus Naturels	Sciences de la Terre & Environnement	TR**	03-V-PSL-NOV	2
ESMI_STE-05	Bioéconomie	Sciences de la Terre & Environnement	S3/S5	03-V-PSL-NOV	2
ESMI_EMS-06	Concevoir Pour Innover	Economie, Management, Société	S3/S5	04-V-MIXTE-NOV	2
ESMI_EMS-07	Logistique durable	Economie, Management, Société	S3/S5	04-V-MIXTE-NOV	2
ESMI_EEP-03	Evolution du système électrique dans un contexte de transition énergétique	Energétique et Procédés	S3/S5	04-V-MIXTE-NOV	2
ESMI_MES-04	Modélisation prospective et politique de lutte contre le changement climatique	Mathématiques et Systèmes	S3/S5	04-V-MIXTE-NOV	2
ESMI_STE-09	Bases de biologie et fonctionnement des écosystèmes	Sciences de la Terre & Environnement	S3/S5	04-V-MIXTE-NOV	2
ESMI_EMS-09	Sociologie des techniques	Economie, Management, Société	TR**	05-V-PSL-MARS	2
ESMI_EMS-11	Nouvelles entreprises et Gouvernance Responsable	Economie, Management, Société	S4/S6	05-V-PSL-MARS	2
ESMI_EMS-12	Economie de l'énergie	Economie, Management, Société	S4/S6	05-V-PSL-MARS	2
ESMI_MES-12	Optimisation combinatoire et stochastique	Mathématiques et Systèmes	S4/S6	05-V-PSL-MARS	2
ESMI_EEP-04	Rôle des Gaz dans la Transition Energétique	Energétique et Procédés	TR**	05-V-PSL-MARS	2
ESMI_STE-06	Géophysique de la subsurface	Sciences de la Terre & Environnement	S4/S6	05-V-PSL-MARS	2
ESMI_EMS-13	Europe utile, une approche industrielle	Economie, Management, Société	S4/S6	06-V-ATHENS-MARS	2
ESMI_EMS-15	City logistics : supply chain & public policies	Economie, Management, Société	S4/S6	06-V-ATHENS-MARS	2
ESMI_EEP-06	Life Cycle of Energy Systems	Energétique et Procédés	S4/S6	06-V-ATHENS-MARS	2
ESMI_STE-08	Geointelligence for Natural Resources Evaluation and Sustainable Management	Sciences de la Terre & Environnement	S4/S6	06-V-ATHENS-MARS	2

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## Parallel TTI.5-accredited Master's

Students can also opt to take a TTI.5-accredited Master's degree in parallel with the civil engineering course. In this case, they follow a smaller number of specialized courses (minimum 8 ECTS during the last two years of the program). In this case, please submit your proposed Master's degree.



## How to apply?

The TTI.5 academic track is presented at the start of the year to civil engineering students. Students who would like to apply must submit their project to the Institute for validation using a document downloadable [here](#). This detailed project should include both general/fundamental and applied lessons.

Completed track projects should be sent to the following address:  
**tti.5@minesparis.psl.eu** (with the email subject: your name, your last name and the mention "Academic Track TTI.5").

## 2022-2023 calendar of TTI.5 seminars

These seminars take place every two months by video. Connection information will be published on our different communication channels (email, website, social media).

Each session is centered on a theme and is led by a specialist. It generally comprises two or three scientific presentations by members (including doctoral students) from the TTI.5 community followed by a free or guided discussion.

### PUBLIC SEMINARS FROM 1.30 PM TO 3.30 PM

Tuesday 19 September 2023

Tuesday 28 November 2023

Friday 19 January 2024

Thursday 21 March 2024

Wednesday 22 May 2024



## Contact

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