






MASTER'S DEGREE IN CIVIL ENGINEERING - BUILDING ENGINEERING TRACK - NEW TECHNIQUES FOR CONSTRUCTION AND RENOVATION "TNCR"

IDENTITY CARD

- > Domain : Sciences, Technologies and Health
- > Full time course
- > [Continuing Education](#)
- > [Master of Engineering](#)
- > [120 ECTS credits](#)
- > 4 semesters
- >  La Rochelle

 - 1 month to access the 1st job

 94 % of graduates are employed

according to a study conducted 18 months after graduation

REGISTRATION

<https://www.univ-larochelle.fr/formation/admission-inscription-et-scolarité/candidatures-et-inscriptions/candidater-universite-la-rochelle/>

CONTACT

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OBJECTIVES

> Presentation



"Would you like to become an executive in the building and civil engineering sector ?

Thanks to the Master's degree in Civil Engineering and its two Building Engineering specialisations, you will be able to design, organise and supervise all stages of a building-related project, from construction and renovation (TNCR specialisation) to the management and integration of energy efficiency and renewable energy techniques (Gl3ER specialisation). You will also receive training in management, communication and interpersonal skills, as your future job will require you to maintain close contact with customers and partners."

In addition to this course, a master's programme in engineering is available :

<https://www.univ-larochelle.fr/formation/nos-formations/cursus-master-ingenierie-cmi>

Marie DUQUESNE



Marie Duquesne

✓ ADMISSION

> Your profile

You have a Bac+3, Bac+4 or equivalent : (minimum of 180 ECTS) you must have knowledge of civil engineering.

> How to apply ?

In the 1st year of the Master's degree, the selection of candidates is made on the basis of their applications documents.

How to apply to the [1st year of the Master's](#)

How to apply to the [2nd year of the Master's](#)

📄 PROGRAMME

● Mandatory ■ Course option

> General Track

> Semester 1

> Cours majeurs

> Dimensioning Framework ●

● Steel Framing

Language used for teaching
French

Teaching time
42h (15h lectures - 18h tutorials - 9h practical work)

3 ECTS credits

Course code
250-1-62

● Timber Framing

Language used for teaching
French

Teaching time
43h 30min (12h lectures - 18h tutorials - 13h 30min practical work)

3 ECTS credits

Course code
250-1-61

> Dimensioning Reinforced Concrete Structures ●

● Calculating Foundations

Language used for teaching
French

Teaching time
42h (15h lectures - 18h tutorials - 9h practical work)

3 ECTS credits

Course code
250-1-52

- Reinforced Concrete Structures

Language used for teaching	French
Teaching time	37h 30min (12h lectures - 16h 30min tutorials - 9h practical work)
3 ECTS credits	
Course code	250-1-51

> Structural Design Tools ●

- Strength of Materials

Language used for teaching	French
Teaching time	24h (12h lectures - 12h tutorials)
3 ECTS credits	
Course code	250-1-41

- Structural Dynamics

Language used for teaching	French
Teaching time	24h (12h lectures - 12h tutorials)
3 ECTS credits	
Course code	250-1-42

> Cours mineures de spécialité

> Minor TNCR (CONSTRUCTION AND RENOVATION): Actions on Structures and Design ■

- Bracing System Design

Language used for teaching	French
Teaching time	15h (6h lectures - 9h tutorials)
3 ECTS credits	
Course code	250-1-82

- Seismic Design of Building Structures

Language used for teaching	French
Teaching time	21h (10h 30min lectures - 10h 30min tutorials)
3 ECTS credits	
Course code	250-1-81

> Research Minor: Advanced Transport Phenomena ■

- Advanced Transport Phenomena 1

Language used for teaching	French
Teaching time	48h (24h lectures - 24h tutorials)
6 ECTS credits	
Course code	250-1-91

> Cours transversaux

> Unités transversales TNCR •

- Communication, Management and Project Management

Language used for teaching	French
Teaching time	13h 30min (7h 30min lectures - 6h tutorials)
1 ECTS credit	
Course code	250-1-04

- Digital Tools for Engineers

Language used for teaching	French
Teaching time	49h 30min (6h lectures - 13h 30min practical work - 30h work in accompaniment)
3 ECTS credits	
Course code	250-1-03

- English for TNCR (CONSTRUCTION AND RENOVATION)

Language used for teaching	French - English
Teaching time	24h (24h tutorials)
2 ECTS credits	
Course code	250-1-02

> Semester 2

> Cours majeurs

> Construction Process and Site Management (Technical Project 2) •

- Construction Procedures and Site Management

Language used for teaching	French
Teaching time	50h (1h 30min tutorials - 48h 30min work in accompaniment)
3 ECTS credits	
Course code	250-2-31

> Professionalisation and Role Playing (Technical Project 1) •

- Structural and Equipment Sizing

Language used for teaching	French
Teaching time	50h (1h 30min tutorials - 48h 30min work in accompaniment)
3 ECTS credits	
Course code	250-2-21

> Research and Development (Research Project) •

- Research and Sustainable Development Processes in Construction

Language used for teaching

French

Teaching time

55h 30min (3h tutorials - 52h 30min work in accompaniment)
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4 ECTS credits

Course code

250-2-11

> Cours mineures de spécialité

> Minor TNCR (CONSTRUCTION AND RENOVATION) ■

- Introduction to BIM Construction Project Management (GI3ER/TNCR)

Language used for teaching

French

Teaching time

21h (6h tutorials - 15h practical work)

3 ECTS credits

Course code

250-2-82

- Numerical Methods for Civil Engineers

Language used for teaching

French

Teaching time

30h (9h lectures - 12h tutorials - 9h practical work)

3 ECTS credits

Course code

250-2-81

> Research Minor: Advanced Transport Phenomena ■

- Advanced Transport Phenomena 2

Language used for teaching

French

Teaching time

48h (12h lectures - 18h tutorials - 18h practical work)

6 ECTS credits

Course code

250-2-91

> Cours transversaux

> Complementary Module ■

- Rescue Project Jean Monnet: Resilience, Climate Change and European Union

Language used for teaching

French

Teaching time

40h (40h lectures)

7 ECTS credits

Course code

000-0-01

> STAGE TNCR ●

- Stage (8 semaines) TNCR

Language used for teaching
French
8 ECTS credits
Course code
250-2-01T-STAG

> Work Placement TNCR ●

- Business Management and Law

Language used for teaching
French
Teaching time
15h (6h lectures - 9h tutorials)
2 ECTS credits
Course code
250-2-03

- Fire Safety

Language used for teaching
French
Teaching time
15h (6h lectures - 9h tutorials)
2 ECTS credits
Course code
250-2-04

- LV1 Anglais TNCR

Language used for teaching
English - French
Teaching time
24h (24h tutorials)
2 ECTS credits
Course code
250-2-02T

> Semester 3

> Cours majeurs

> Construction Project Management ●

- Advanced Calculation of Reinforced Concrete Structures

Language used for teaching
French
Teaching time
27h (10h 30min lectures - 12h tutorials - 4h 30min practical work)
3 ECTS credits
Course code
250-3-61

- Design of Composite Structures

Language used for teaching
French
Teaching time
19h 30min (12h lectures - 7h 30min tutorials)
2 ECTS credits
Course code
250-3-63

- Design of Prestressed Concrete Structures

Language used for teaching
French

Teaching time
15h (9h lectures - 6h tutorials)

2 ECTS credits

Course code
250-3-62

> Durability of Structures and Risks ●

- Maintenance and Rehabilitation of Structures

Language used for teaching
French

Teaching time
21h (15h lectures - 6h tutorials)

2 ECTS credits

Course code
250-3-42

- Risk Management in Construction

Language used for teaching
French

Teaching time
27h (15h lectures - 12h practical work)

2 ECTS credits

Course code
250-3-43

- Structural Reliability

Language used for teaching
French

Teaching time
28h 30min (18h lectures - 10h 30min tutorials)

2 ECTS credits

Course code
250-3-41

> Earthquake-Resistant Designs and Maintenance Engineering ●

- Engineering of Existing Structures

Language used for teaching
French

Teaching time
33h (6h lectures - 27h practical work)

3 ECTS credits

Course code
250-3-52

- Seismic Design

Language used for teaching
French

Teaching time
24h (12h lectures - 12h tutorials)

2 ECTS credits

Course code
250-3-51

- Structures: Design and Calculations

Language used for teaching

French

Teaching time

21h (21h practical work)

2 ECTS credits

Course code

250-3-53

> Cours mineures de spécialité

> Minor TNCR: Building Pathology and Rehabilitation ■

- Durability of Reinforced Concrete Structures

Language used for teaching

French

Teaching time

22h 30min (13h 30min lectures - 9h practical work)
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2 ECTS credits

Course code

250-3-83

- Modelling Transport Phenomena in Porous Media

Language used for teaching

French

Teaching time

13h 30min (13h 30min lectures)

2 ECTS credits

Course code

250-3-82

- New Materials and Processes

Language used for teaching

French - English

Teaching time

13h 30min (13h 30min lectures)

2 ECTS credits

Course code

250-3-81

> Research Minor: Advanced Transport Phenomena ■

- Advanced Transport Phenomena 3

Language used for teaching

French

Teaching time

37h (24h lectures - 9h tutorials - 4h practical work)

6 ECTS credits

Course code

250-3-91

> Cours transversaux

> Unités transversales TNCR •

- Ecological Transition and Environmental Assessment of Buildings

Language used for teaching

French

Teaching time

9h (4h 30min lectures - 4h 30min tutorials)

1 ECTS credit

Course code

250-3-03

- English for TNCR (CONSTRUCTION AND RENOVATION)

Language used for teaching

French - English

Teaching time

24h (24h tutorials)

2 ECTS credits

Course code

250-3-01

- Projects and Operations Economy (BIM)

Language used for teaching

French

Teaching time

10h 30min (1h 30min lectures - 9h practical work)

1 ECTS credit

Course code

250-3-04

> Semester 4

> Cours transversaux

> Complementary Module ■

- Rescue Project Jean Monnet: Resilience, Climate Change and European Union

Language used for teaching

French

Teaching time

40h (40h lectures)

7 ECTS credits

Course code

000-0-01

> Stage TNCR ●

- Stage (22 semaines) (TNCR)

Language used for teaching

French

30 ECTS credits

Course code

250-4-01T-STAG

AFTERWARDS

Information subject to change

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