






MSC CIVIL ENGINEERING PROGRAMME BUILDING ENGINEERING - 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

Site Sciences et Technologies
Avenue Michel Crépeau
17042 La Rochelle cedex 1
Phone : +33 (0)5 46 45 82 59
Web :
Email : contact_sciences@univ-lr.fr

OBJECTIVES

> Presentation

“ Are you interested in becoming an executive in the construction and civil engineering sector ?

Thanks to the Master's degree in Civil Engineering and its two building engineering courses, you will be able to design, organise and supervise all the stages of a building project : from construction and rehabilitation (TNCR course) to the management and integration of energy efficiency and renewable energy techniques (G3ER course).

You will also be trained in management, communication and relational skills as you will be required to maintain close contact with customers and partners in the exercise of your future profession.



Ameer El Amine Hamami

✓ 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

> Semester 1

> Dimensionnement des charpentes ●

● Charpente en bois

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

● Charpente métalliques

Language used for teaching

French

Teaching time

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

3 ECTS credits

Course code

250-1-62

> Dimensionnement des structures en béton armé ●

● Calcul des fondations

Language used for teaching

French

Teaching time

36h (12h lectures - 15h tutorials - 9h practical work)

3 ECTS credits

Course code

250-1-52

● Structures en béton armé

Language used for teaching

French

Teaching time

36h (12h lectures - 15h tutorials - 9h practical work)

3 ECTS credits

Course code

250-1-51

> Outils pour le dimensionnement des structures ●

- Dynamique des structures

Language used for teaching

French

Teaching time

24h (12h lectures - 12h tutorials)

3 ECTS credits

Course code

250-1-42

- Outils pour le dimensionnement des structures

Language used for teaching

French

Teaching time

24h (12h lectures - 12h tutorials)

3 ECTS credits

Course code

250-1-41

> Mineure recherche : méthodes avancées pour les structures cotières et maritimes ■

- Effet des écoulements sur les ouvrages

Language used for teaching

French

Teaching time

24h (12h lectures - 12h tutorials)

3 ECTS credits

Course code

250-1-91

- Voiles et structures minces pour le génie civil

Language used for teaching

French

Teaching time

24h (12h lectures - 12h tutorials)

3 ECTS credits

Course code

250-1-92

> Mineure TNCR : actions sur les structures et conception ■

- Calcul parasismique des structures

Language used for teaching

French

Teaching time

21h (10h 30min lectures - 10h 30min tutorials)
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3 ECTS credits

Course code

250-1-81

- Contreventement des structures

Language used for teaching

French

Teaching time

15h (6h lectures - 9h tutorials)

3 ECTS credits

Course code

250-1-82

> Unités transversales G13ER/TNCR ●

■ LV1 Anglais pour GI3ER

Language used for teaching

French

Teaching time

24h (24h tutorials)

2 ECTS credits

Course code

250-1-01

■ LV1 Anglais pour TNCR

Language used for teaching

French

Teaching time

24h (24h tutorials)

2 ECTS credits

Course code

250-1-02

● Multiphysique du bâtiment 1

Language used for teaching

French

Teaching time

36h (18h lectures - 18h tutorials)

2 ECTS credits

Course code

250-1-03

● Utilisation de bibliothèques de programmation scientifique & python

Language used for teaching

French

Teaching time

33h 30min (3h practical work - 30h 30min work in accompaniment)

2 ECTS credits

Course code

250-1-04

> Semester 2

> Procédés de construction et conduite de travaux (Projet Technique 2) ●

● Procédés de construction et conduite de travaux

Language used for teaching

French

Teaching time

50h (1h 30min tutorials - 48h 30min work in accompaniment)

4 ECTS credits

Course code

250-2-31

> Professionnalisation et mise en situation (Projet Technique 1) ●

● Dimensionnement des ouvrages et des équipements

Language used for teaching

French

Teaching time

50h (1h 30min tutorials - 48h 30min work in accompaniment)

4 ECTS credits

Course code

250-2-21

> Recherche et développement (Projet recherche) ●

- Recherche et procédés de développement durable dans la construction

Language used for teaching	French
Teaching time	55h 30min (3h tutorials - 52h 30min work in accompagnement)
4 ECTS credits	
Course code	250-2-11

> Mineure TNCR ■

- Introduction à la gestion de projet autour du BIM (TNCR)

Language used for teaching	French
Teaching time	21h (6h tutorials - 15h practical work)
3 ECTS credits	
Course code	250-2-82

- Méthodes numériques pour le génie civil

Language used for teaching	French
Teaching time	30h (9h lectures - 12h tutorials - 9h practical work)
3 ECTS credits	
Course code	250-2-81

> Mineure recherche : méthodes avancées pour les structures cotières et maritimes ■

- Modélisation avancée pour les phénomènes couplés en GC

Language used for teaching	French
Teaching time	48h (12h lectures - 18h tutorials - 18h practical work)
6 ECTS credits	
Course code	250-2-91

> Unités transversales GI3ER / TNCR ●

- Gestion et droit d'entreprise

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

- LV1 Anglais pour GI3ER

Language used for teaching	French
Teaching time	24h (24h tutorials)
2 ECTS credits	
Course code	250-2-01

■ LV1 Anglais pour TNCR

Language used for teaching
French

Teaching time
24h (24h tutorials)

2 ECTS credits

Course code
250-2-02

● Sécurité incendie

Language used for teaching
French

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

2 ECTS credits

Course code
250-2-04

■ Stage (8 semaines) G3ER

Language used for teaching
French

6 ECTS credits

Course code
250-2-05-STAG

■ Stage (8 semaines) TNCR

Language used for teaching
French

6 ECTS credits

Course code
250-2-06-STAG

> Semester 3

> Conception parasismique et ingénierie de l'existant ●

● Conception et calcul d'ouvrages

Language used for teaching
French

Teaching time
21h (21h practical work)

2 ECTS credits

Course code
250-3-53

● Conception parasismique

Language used for teaching
French

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

2 ECTS credits

Course code
250-3-51

● Ingénierie des structures existantes

Language used for teaching
French

Teaching time
33h (3h lectures - 30h practical work)

2 ECTS credits

Course code
250-3-52

> Gestion d'une opération de construction •

- Calcul avancé pour les ouvrages en béton armé

Language used for teaching	French
Teaching time	25h 30min (9h lectures - 12h tutorials - 4h 30min practical work)
2 ECTS credits	
Course code	250-3-61

- Calcul des structures mixtes

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

- Calcul d'éléments en béton précontraint

Language used for teaching	French
Teaching time	15h (9h lectures - 6h tutorials)
2 ECTS credits	
Course code	250-3-62

> Risques et durabilité des ouvrages •

- Fiabilité des structures

Language used for teaching	French
Teaching time	25h 30min (15h lectures - 10h 30min tutorials)
2 ECTS credits	
Course code	250-3-41

- Maintenance et réhabilitation des structures

Language used for teaching	French
Teaching time	24h (18h lectures - 6h tutorials)
2 ECTS credits	
Course code	250-3-42

- Pathologies des ouvrages et gestion des risques

Language used for teaching	French
Teaching time	27h (15h lectures - 12h practical work)
2 ECTS credits	
Course code	250-3-43

> Mineure recherche : méthodes avancées pour les structures cotières et maritimes ■

- Approches probabilistes pour le dimensionnement

Language used for teaching	French
Teaching time	19h 30min (10h 30min lectures - 9h tutorials)
2 ECTS credits	
Course code	250-3-92

- Calcul et dimensionnement de structures sous chargement cyclique

Language used for teaching	French
Teaching time	10h (6h lectures - 4h practical work)
2 ECTS credits	
Course code	250-3-93

- Changement d'échelles dans les milieux hétérogènes en GC

Language used for teaching	French
Teaching time	7h 30min (7h 30min lectures)
2 ECTS credits	
Course code	250-3-91

> Mineure TNCR : Pathologie et réhabilitation des constructions ■

- Durabilité des ouvrages en béton armé

Language used for teaching	French
Teaching time	22h 30min (13h 30min lectures - 9h practical work)
2 ECTS credits	
Course code	250-3-83

- Modélisation des phénomènes de transfert dans les milieux poreux

Language used for teaching	French
Teaching time	13h 30min (13h 30min lectures)
2 ECTS credits	
Course code	250-3-82

- Nouveaux matériaux et procédés

Language used for teaching	French
Teaching time	13h 30min (13h 30min lectures)
2 ECTS credits	
Course code	250-3-81

> Unités transversales G13ER / TNCR ●

- Economie de projet et d'exploitation en BIM

Language used for teaching	French
Teaching time	10h 30min (1h 30min lectures - 9h practical work)
2 ECTS credits	
Course code	250-3-04

- LV1 Anglais pour GI3ER

Language used for teaching	French
Teaching time	24h (24h tutorials)
2 ECTS credits	
Course code	250-3-02

- LV1 Anglais pour TNCR

Language used for teaching	French
Teaching time	24h (24h tutorials)
2 ECTS credits	
Course code	250-3-01

- Multiphysique du bâtiment 2

Language used for teaching	French
Teaching time	10h 30min (10h 30min lectures)
2 ECTS credits	
Course code	250-3-03

> Semester 4

> Unités transversales TNCR ●

- Stage (22 semaines) (TNCR)

Language used for teaching	French
30 ECTS credits	
Course code	250-4-21-STAG

AFTERWARDS

Information subject to change

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