

Master in

STEEL AND COMPOSITE CONSTRUCTION ENGINEERING

2024/2026 14th Edition

Branches :

- Structural Performance
- Additive Manufacture and Production

APPLICATIONS

- 1st CALL 01 MAR - 01 APR
- 2nd CALL 03 JUN - 15 JUL
- 3rd CALL 03 SEP - 13 SEP



Institute for Sustainability and
Innovation in Structural Engineering



UNIVERSIDADE D
COIMBRA

Coordination



Luís Simões da Silva
Course Coordinator



João Pedro Martins
Branch Coordinator
Structural Performance



Artur Mateus
Branch Coordinator
Additive Manufacture
and Production



ucpages.uc.pt/fctuc/dec/descobre-o-dec/mecmm/

Civil Engineering Department, University of Coimbra
A Rua Luís Reis Santos, Pólo II, 3030-788 Coimbra, Portugal
T 239 797 260 · 960 289 687 · secretariado.isise@uc.pt
W www.uc.pt/fctuc/dec | www.isise.net

Our Partners

(more partners soon)



FINANCIAL SUPPORT
FOR STUDENTS!



www.dec.uc.pt



Objectives

The Master's course in Steel and Composite Construction Engineering aims to provide advanced training in two areas of specialisation: Structural Performance and Manufacturing and Additive Production, developing skills in: 1) the conception, design, manufacture, execution, supervision and management of construction works with steel and composite structures; 2) production, automation, machinery and robotics applied to the metalworking and steel and composite construction industry, including design, operation and management. The cross-cutting nature of the content taught also qualifies for highly qualified roles in the construction sector and the manufacturing industry.

Who It's For

Managers and middle and senior managers of industrial and technology-based companies in the areas of steel and composite construction, metalworking, operations, production, logistics, engineering, technology and innovation. Managers, engineers, entrepreneurs and consultants who aspire to specialised training in structural applications in steel and composite construction (Specialisation in Structural Performance) or to lead the implementation of Industry 4.0, with a strong application in metalworking and steel and composite construction (Specialisation in Manufacturing and Additive Production).

Course Structure

The Master's Degree in Steel and Composite Construction Engineering has 120 ECTS and a duration of 4 academic semesters. The course has a curricular structure that includes 2 compulsory curricular units, 13 optional curricular units (with 6 ECTS each), followed by the master's dissertation. This curricular unit corresponds to 30 ECTS and takes place during the 4th semester, and is intended to be a vehicle for consolidating, applying and integrating the knowledge acquired throughout the course, with a strong applied slant and whenever possible in a business environment. The subjects are grouped into 6 scientific areas: Design, Technology, Management, Sustainability, Advanced Theory and Computing. Optional subjects may be subject to conditions under the terms of Article 15 of FCTUC's Regulations for Second Cycle Programmes.

Study Programme 2024/2026

BRANCHE OF STRUCTURAL PERFORMANCE	ECTS	BRANCH OF ADDITIVE MANUFACTURE AND PRODUCTION	ECTS
-----------------------------------	------	---	------

1ST YEAR- 1ST SEMESTER

Sustainability and Life Cycle Analysis of Structures			6
Digital Technologies			6
Design of elements and steel structures	6	Ferrous and non-ferrous metals	6
Steel technology, weld, fatigue and fragile failure	6	Materials: Properties and Production	6
Design of concrete structures and foundations	6	Robotics	6

1ST YEAR - 2ND SEMESTER

Advanced analysis of structures and design of I-girders	6	Techniques for material characterisation	6
Seismic design	6	Weldability	6
Analysis and sizing to fire	6	Physical Metallurgy and Materialography	6
Design of composite steel-concrete structures	6	Introduction to Data Science and Engineering	6
Connections	6	Welding Processes (Welding Technology)	6

2ND YEAR - 1ST SEMESTER

Design of cold form, aluminium and stainless steel structures	6	Autonomous Robotic Systems	6
Project of steel structures for renewable energies	6	Additive Manufacturing/Production (Metallic, Polymeric, Cementitious)	6
Project of bridges	6	Additive manufacturing post processing technologies	6
Project of building	6	Design for additive manufacturing and production	6
Design in Glass and Wood	6	Qualification of additive manufacturing components	6

2ND YEAR - 2ND SEMESTER

Dissertation			30
--------------	--	--	----



Type of Student Support

1. Support in paying tuition fees:
Payment of tuition fees to national or similar students and/or international students;
2. Support for students living expenses:
Payment of subsistence support grant (750€/month)*;
3. Possibility for the student to work part-time in partner companies;
4. Development of the master's thesis in a partner company with co-supervision from a senior engineer from the company.



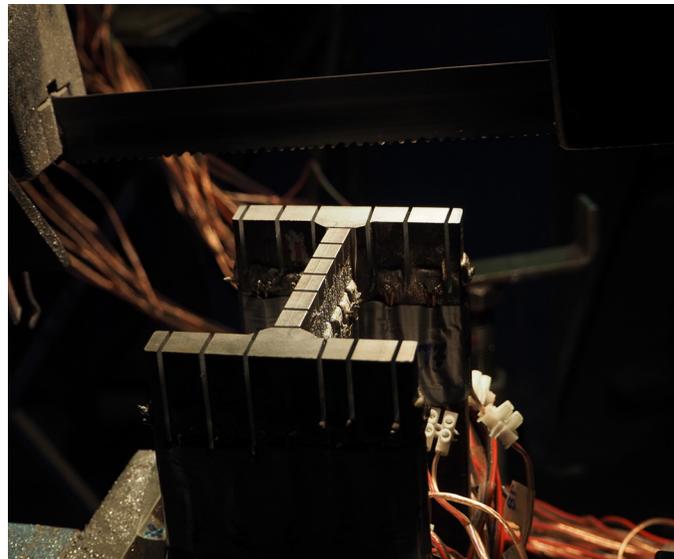
Future Career

- Work in the areas of steel and composite construction, metalworking, operations, production, logistics, engineering, technology and innovation;
- Participation in scientific research projects.

Admission Requirements

- a) Holders of a bachelor's degree or legal equivalent in Civil Engineering, Mechanical Engineering, Industrial Engineering, Electrical and Electromechanical Engineering or similar;
- b) Holders of a foreign higher academic degree awarded following a 1st cycle of studies organised in accordance with the principles of the Bologna Process by a State adhering to this Process;
- c) Holders of a foreign higher academic degree that is recognised as satisfying the objectives of a bachelor's degree;
- d) Holders of an academic, scientific or professional curriculum that is recognised as attesting to their ability to complete this cycle of studies.

The recognition referred to in sub-paragraphs b) to d) is carried out by the Scientific Committees responsible for the courses in question, which may delegate to a Selection Committee.



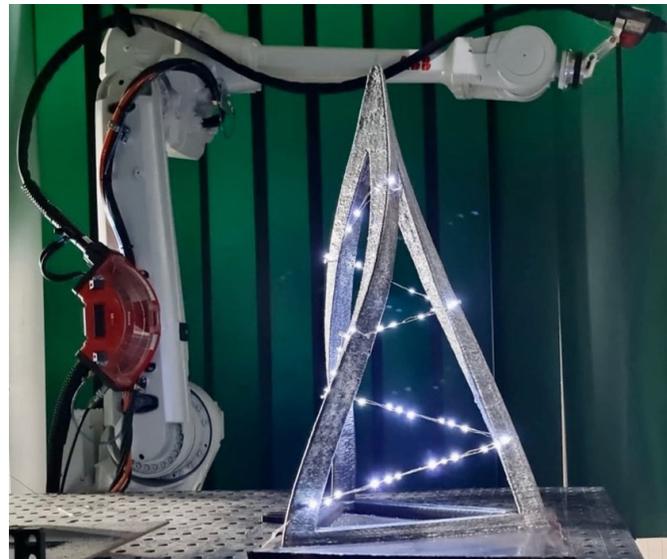
Tuition fees

In the 2023/24 academic year, National or Equivalent Students will be charged 1500€ and International Students will be charged 7000€. The information provided does not dispense with consulting the Applicants page at <https://apps.uc.pt/courses/PT/course/333>. There is the possibility of scholarships.

Mode of Study

The curricular subjects are taught face-to-face with the possibility of a hybrid regime (face-to-face-online) and in Portuguese, in a concentrated timetable, on Fridays from 9am to 7pm and Saturdays from 9am to 1pm.

LEGAL FRAMEWORK FOR THE QUALIFICATION: The qualification is governed by Decree-Law no. 74/2006, of 24 March, amended and republished by Decree-Law no. 107/2008, of 25 June; Ministerial Order no. 782/2009, of 23 July and accredited by A3E.



Professors

Aldina Santiago	Associate Prof., DEC-FCTUC
Alfredo Dias	Associate Prof. w/ Habilit, DEC-FCTUC
Ana Francisca Santos	PhD Researcher, DEC-FCTUC
André Dias	PhD Researcher, SerQ
António Gameiro Lopes	Associate Prof., DEM-FCTUC
Artur Mateus	Lead Researcher, DEC-FCTUC
Carlos Leitão	Assistant Prof., DEM-FCTUC
Carlos Rebelo	Associate Prof., DEC-FCTUC
David Andrade	PhD Researcher, DEC-FCTUC
Dulce Rodrigues	Associate Prof. w/ Habilit, DEM-FCTUC
Fernando Branco	Associate Prof., DEC-FCTUC
Filip Ljubinkovic	PhD Researcher, DEC-FCTUC
Gilberto Vaz	Assistant Prof., IPC
Hélder Craveiro	PhD Researcher, DEC-FCTUC
Helena Gervásio	Associate Prof., DEC-FCTUC
Hugo Delgado	PhD Researcher, DEC-FCTUC
Isabel Valente	Assistant Prof., UM
João Pedro Martins	Assistant Prof., DEC-FCTUC
Joaquim Alexandre P. Cruz	Assistant Prof., UA
José Miguel Castro	Assistant Prof., FEUP
José Paulo Lopes de Almeida	Assistant Prof., DEC-FCTUC
Luís Laím	Assistant Prof., DEC-FCTUC
Luís Simões da Silva	Full Professor, DEC-FCTUC
Nuno Lopes	Associate Prof., UA
Paulo Santos	Associate Prof., DEC-FCTUC
Rodrigo Gonçalves	Full Professor, UNL
Rui Simões	Associate Prof., DEC-FCTUC
Sandra Jordão Alves	Assistant Prof. DEC-FCTUC
Sree Sabari	PhD Researcher, DEC-FCTUC
Valentina Chkoniya	PhD Researcher, DEC-FCTUC